GOLDEN STATE ENVIRONMENTAL
Cultural, Environmental & Litigation Support Services
Certified SBA 8(a) / DVBE / WBE / SBE
15051 Leffingwell Road, Suite 102, Whittier, CA 90604
P.O. Box 3706 La Habra, CA 90632-3706
(562) 691-8284 Phone / (888) 356-1250 Fax

August 15, 2005

White Mountain Estates, LLC
332 West Howell Avenue
Ridgecrest, CA 93555

RE: Addendum to Preliminary Hydrogeologic Investigation, White Mountain Estates – Phase 2, Chalfant Valley, Mono County, California

Attn: Robert (Bob) Stark

Dear Mr. Stark:

Golden State Environmental (GSE) is pleased to provide the following addendum to the preliminary description of hydrogeologic conditions, recharge estimate, and CEQA documentation specific to Section VIII - Hydrology and Water Quality for the area of the proposed White Mountain Estates (WME) Phase 2 located in Chalfant Valley, Mono County, California. This addendum has been prepared to provide documentation of the recently installed second groundwater production well, and in response to the July 8, 2005 letter from AMEC following their review of the "Preliminary Hydrogeologic Investigation, White Mountain Estates-Phase 2, Chalfant Valley, Mono County."

Background

Following the installation, development and testing of the first groundwater production well (WME Well #1) in Lot B in the upper part of the proposed White Mountain Estates Phase 2 site, a second well was installed. The second well (WME Well #2) was installed in Lot 12 of the lower part of the proposed Phase 2 development (Figure 1). The purpose of the WME Well #2 is to expand the water supply provided by WME Well #1 and to provide data for evaluation of the increased reliability of the water supply for the proposed development.

Site Hydrogeologic Conditions

The proposed WME Phase 2 development is located within the Tri-Valley area, within Chalfant Valley. Chalfant Valley is bounded on the east by the White Mountains and on the west by sloping lava and pyroclastic flows of the Bishop Tuff. The fault system that runs north-south through the WME Phase 2 upper development, the White Mountain Fault Zone, generally defines the eastern margin of the alluvial valley groundwater system[a].

The geology in the vicinity of the proposed WME Phase 2 development is characterized by alluvial fan deposits that are superposed over valley fill alluvium[b], both of Quaternary age.

[a] CDMG, 1985 and 1992.
[b] Danskin, Wesley R., 1998, Evaluation of the Hydrogeologic System and Selected Water-Management Alternatives in the Owens Valley, California; U.S. Geological Survey Water-Supply Paper 2370, pages 13-20.

For a more thorough description of the hydrogeologic conditions in the vicinity of the proposed WME development, refer to the previously submitted "Preliminary Hydrogeologic Investigation, White Mountain Estates-Phase 2, Chalfant Valley, Mono County" report by GSE dated May 10, 2005

Installation of Second Water Supply Well (WME Well #2)

A second water supply well (WME Well #2) for the proposed WME Phase 2 development was installed during June 2005. The well is constructed to a depth of 355 feet, having a screened interval from 255 to 355 feet, at an elevation of approximately 4,332 feet msl. Initial depth to groundwater was measured at approximately 135 feet below top of casing, but later stabilized at 130.76 feet following well development. The well log is provided in Attachment A.

The well is constructed of 8-inch diameter Schedule 80 PVC installed within an approximately 14-inch pilot borehole. The well screen is set from a depth of 255 feet to 355 feet bgs and is constructed with factory cut slots to 0.032-inch openings. The gravel pack consists of "birdseye" sand set from 50 feet to 355 feet bgs. A cement seal was set from just below ground surface to the top of the gravel pack at 50 feet bgs.

From a depth of 60 feet bgs, the soil cuttings indicated the well intersected alluvial gravels and sand, from 60 feet to a depth of 80 feet intersected variable medium to coarse grained sand and sand with gravel, from 80 to 235 feet intersected sandy gravel to gravel with sand with zones of fine to coarse grained sand, and from 235 to the total depth sandy and silty gravel. The gravel is generally composed of volcanic and metasedimentary lithic fragments with varying amounts of silt and fine to coarse grained sand. The sand ranges from fine to coarse grained (mostly medium to coarse), and contains quartz, some feldspar and other lithic fragments of volcanic and metasedimentary composition.

24-hour Aquifer Test

Following installation and development WME Well #2, a 24-hour pumping test was performed at this well during the period from July 6 to July 7, 2005. A step-drawdown test was performed before initiation of the 24-hour test to collect drawdown data for the purpose of selecting a suitable pumping rate based on the drawdown response. The 24-hour aquifer test was initiated at 2120 hours on July 6. Pumping continued until 2120 hours on July 7. Water was pumped using a 15-hp submersible pump set to a depth of 236 feet below top of casing. The pump intake was approximately 19 feet above the top of screen. The pump was powered by a 25-Kv diesel generator. Groundwater was discharged at rates of between approximately 200 and 168 gpm to the ground surface via 3-inch diameter galvanized steel pipe into an existing surface drainage. Flow, in gallons per minute (gpm), was measured using a mechanical flow meter (3-inch) capable of reading to 1-gpm increments.

The aquifer test was designed to pump a constant rate of 180 gpm. However, due to unexpected limitations imposed by test equipment, the actual pumping rate slowly decreased with declining water elevation in the well. In general, 71% of the test was performed at 170 gpm, 28% was at a rates between 180 gpm and 170 gpm, and 1% of the test was at a rate of 200 gpm. Consequently, all aquifer test data was analyzed using the variable pumping rate data.

During the 24-hour period of drawdown, the flow meter indicated that 246,100 gallons of water was discharged from the well. This is equivalent to pumping the well for the 24-hour period at a rate of 171 gpm. During the duration of the test, the water was clear and free of observable debris such as sand and silt based on visual observation of occasional grab samples collected.

Aquifer Parameters and Hydrogeologic Implications

Analysis of the drawdown and recovery data was performed using AQTESOLV for Windows, Professional Edition (Version 3.5) by HydroSOLVE, Inc. The aquifer test data and analysis results are presented in Attachment B.

Three aquifer models and six solution methods were analyzed as follows:

Aquifer Model	Solution Method	Aquifer Thickness (ft)	T (ft^2/Min)	T (gpd/ft)	S	S_y	K (ft/min)	K (gpd/ft^2)	K (ft/day)
Unconfined	Theis	220	0.5883	6,337	2.187E-6	-	0.002674	29	3.9
	Cooper-Jacob	220	0.4836	5,209	4.579E-5	-	0.002198	24	3.2
	Neuman (Early Data)	220	0.5136	5,532	2.187E-6	0.001	0.00213	23	3.1
	Neuman (Late Data)	220	0.4976	5,360	3.344E-6	0.001	0.00205	22	2.9
Leaky	Hantush	220	0.5955	6,414	0.00086	-	0.002707	29	3.9
	Hantush	500	1.21	13,033	0.00522	-	0.002419	26	3.5
	Hantush	1,000	2.44	26,281	0.00975	-	0.002440	26	3.5
	Moench (Case 1)	220	0.3298	3,552	0.03336	-	0.001499	16	2.2
	Moench (Case 1)	500	0.3298	3,552	0.03336	-	0.000659	7.1	1.0
	Moench (Case 1)	1,000	0.3298	3,552	0.03328	-	0.000329	3.5	0.5
Confined	Theis	220	0.6569	7,075	0.00041	-	0.002986	32	4.3
	Theis	500	1.240	13,356	0.00473	-	0.002481	27	3.6
	Theis	1,000	2.479	26,701	0.00576	-	0.002479	27	3.6

The data were first analyzed using the Theis (1935) solution method for both unconfined and confined aquifer models to provide a first order approximation of aquifer parameters, and to a much lesser extent, evaluate how well the type curves correlate. The saturated thickness was initially assumed to be the thickness of the aquifer penetrated by the well, that is, 220 feet, although it is recognized that the aquifer is considerably thicker.

The Theis solution for an unconfined aquifer is for pumping/recovery test data with variable discharge rates and partial aquifer penetration, and includes Jacob's correction for partial dewatering of the aquifer applied to the displacement data. The data were also analyzed using the Cooper-Jacob (1946) and Neuman (1974) solutions. The Cooper-Jacob (1946) solution for an unconfined aquifer is a straight-line solution for pumping test data with variable discharge rates. The Neuman (1974) solution for an unconfined aquifer is for pumping/recovery test data with variable discharge rates, delayed gravity response and partial aquifer penetration. The three solutions provided very low values for storativity (specific yield); typical of those normally associated with confined aquifer conditions.

Analysis of the data using the Theis (1935) solution method for a confined aquifer model, and Hantush (1960) and Moench (1985) for a semi-confined (leaky) aquifer model was performed. The actual saturated thickness of the aquifer in the area of Phase 2 WME Well #2 is unknown but would reasonably be expected to be much thicker than the well penetration of 220 feet. Two additional aquifer thicknesses, 500 and 1,000 feet, were used in the analysis for both the confined and leaky aquifer models. For the purposes of this evaluation, a thickness of 500 feet is assumed, and represents a conservative value for planning purposes.

The Theis (1935) solution for a confined aquifer is for pumping/recovery test data with variable discharge rates and partial penetration. The results indicated storativity within the range expected for a confined aquifer. However, the calculated values for transmissivity increased with aquifer thickness, a characteristic normally associated with unconfined conditions or confined condition where the piezometric level drops below the top of the aquifer.

The Hantush (1960) solution for a leaky aquifer is for pumping/recovery test data with variable discharge rates, storage in the aquitard(s) and partial aquifer penetration. The Moench (1985) solution is for leaky aquifer pumping/recovery test data with variable discharge rates, storage in the aquitard(s) with a constant head aquitard boundary condition (Case 1), wellbore storage and partial aquifer penetration. The results of the Hantush (1960) analysis indicated storativity values comparable to those typical of confined aquifer conditions but with transmissivity values increasing with aquifer thickness, a characteristic normally associated with unconfined conditions or confined condition where the piezometric level drops below the top of the aquifer. The results of the Moench (1985) – Case 1 solution[c] indicated storativity values more commonly associated with unconfined aquifer conditions but with transmissivity values that remained constant with increasing aquifer thickness, suggesting confined conditions with the piezometric level remaining above the top of the aquifer.

The selection of the aquifer model that best represents the conditions expected in the vicinity of the test well (Phase 2 WME Well #2) is based on the pump test data and on available geological and hydrogeological documentation. The geology of the valley fill materials[defg] is reported to contain sands and gravels with intervening silts and clays associated with younger alluvial fan deposits. In the vicinity of the proposed development, the source of the alluvium is from the mountain front escarpment to the east. Numerous faults are mapped in along this escarpment[h]. These faults, along with the interbedded silt and clay deposits, are capable of producing vertically and laterally discontinuous stratifications within the alluvium, and can

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[c] The type-curves for this solutions exhibited a closer correlation with the data than any of the other solutions.
[d] As derived from the geologic logs from the two Phase 2 wells, MWE Well #1 and #2.
[e] Danskin, Wesley R., 1998, Evaluation of the Hydrogeologic System and Selected Water-Management Alternatives in the Owens Valley, California; U.S. Geological Survey Water-Supply Paper 2370, pages 13-20.
[f] Philip Williams & Associates, 1980, The Hydrology of the Benton, Hammil, and Chalfant Valleys, Mono County, California, Final Report; March, pages 12-13.
[g] MHA Environmental Consulting, Inc., 2001, Task 1 Report, Preliminary Data Collection and Hydrologic Models for the US Filter Tri-Valley Surplus Groundwater Program, Mono County, California; March 9, pages 4-19 and 4-20.
[h] Based on trenching and mapping performed by Sierra Geotechnical Services, Inc., Plate 1 – Site Geologic Map and Plate 2 – Geologic Cross Sections A-A' and A'- A''

act as semi-permeable boundary conditions or barriers to groundwater flow within the aquifer. For Example, the influence of faulting on the groundwater movement east of Phase 2 WME Well #2 is evidenced by the presence of springs along the mapped fault zones, indicating a spreading of groundwater draining from the White Mountains. The faults act as groundwater barriers controlling spring discharge in the area, with water spilling over low spots in the surface expression of the fault (dam). In addition, an undetermined amount of underflow and leakage through the faults would be expected as well, further contributing to the groundwater system below (west) of the faults. Consequently, the conceptual model that is best supported by the current data is that of a hydrogeologic setting consistent with a leaky aquifer model.

The Hantush (1960) and Moench (1985) – Case 1 solutions for a leaky aquifer model provide two different interpretations of the subsurface conditions. The Hantush (1960) solution is simpler but considers storage in the aquitard(s) contributing water as the aquifer is being pumped. The Moench (Case 1) is more complex considering storage in the aquitard(s) and wellbore skin, and assumes that the aquitard is overlain or underlain by a constant head aquitard boundary. The available hydrogeologic data would indicate that the simpler solution, that of storage from the aquitard(s) represents a more reasonable interpretation of the subsurface conditions as it seems unlikely the any extensive constant head boundary conditions are present in the vicinity of the Phase 2 WME Well #2. Therefore, the Hantush (1960) solution is considered the most appropriate.

Based on the above evaluation, the estimated aquifer parameters in the vicinity of the well, assuming a saturated aquifer thickness of 500 feet, are as follows:

- Transmissivity – 1.21 feet^2 per minute (approximately 13,033 gpd/ft);
- Hydraulic conductivity of 0.00242 feet per minute (3.5 feet per day)[ij]; and
- Storativity between 0.00522[k].

Analysis of the previous aquifer test results for the Phase 2 WME Well #1[l], located approximately 770 feet east of Phase 2 Well #2, previously suggested that this well was screened in a fault-block aquifer. This was supported by the following:

- location of the well in an area of mapped fault traces;
- possible interception of a fault plane by the well as suggested by both well log data and projection of a mapped fault trace to depth; and
- apparent (projected) difference (approximately 29 to 58 feet) in water level elevations between the Phase 1 Well and the Phase 2 WME Well #1.

Based on these data, hydrogeologic separation of the valley aquifer system and that associated with the Phase 2 Well #1 was proposed. Within the context of the understanding of the complex hydrogeologic setting at that time and in conjunction with the geotechnical

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[i] This result matches the results of a specific capacity test survey from 46 wells. The summarized data provided by U.S. Filter (Task 1 Report – Preliminary Data Collection and Hydrologic Models for the U.S. Filter Tri-Valley Surplus Groundwater Program, Mono County, California, MHA Environmental Consulting, Inc.; March 9, 2001) indicates that wells completed to depths less than 400 feet have a hydraulic conductivity of less than 15 feet per day.

[j] The range in hydraulic conductivity for all solutions ranges from 0.5 to 4.3 ft/day (average = 3 ft/day).

[k] The storativity is dependant on the actual thickness of the aquifer, increasing with increasing aquifer thickness.

[l] Preliminary Hydrogeologic Investigation, White Mountain Estates-Phase 2, Chalfant Valley, Mono County; report by GSE dated May 10, 2005

trenching data recently acquired, it seemed a likely scenario to explain the observations and available data. Such conditions could cause the aquifer to respond to pumping as would be anticipated for a semi-confined (leaky) aquifer. However, subsequent analysis of the pump test data for the Phase 2 WME Well #2 indicates that the proposed fault block aquifer is not as well defined and may not be present as originally suggested. The similarity in groundwater elevations for Phase 2 wells #1 and #2 indicate that they are probably screened in the same aquifer. Moreover, the reported[m] depth to water in the Phase 1 well apparently was measured at the time the well was installed, and it is likely that the well has experience local drawdown in response to a basin-wide lowering of groundwater elevations[n][o] since the Phase 1 well was installed. Consequently, it is very reasonable to assume that the groundwater elevation in the Phase 1 well is similar to the measured groundwater elevations in the Phase 2 wells #1 and #2, indicating that all three wells have been completed in the main valley aquifer system.

Groundwater Quality

Groundwater quality samples were collected from Phase 2 Well #2 and analyzed for general minerals, metals (including arsenic) and radioactivity (gross α-particle). A comparison of the analytical parameters from Phase 2 Well #2 with the Phase 2 Well #1 and spring, and the Phase 1 Well samples is provided in the following table:

Comparison of Selected Water Quality Parameters

Parameter	Units	WME Phase 2 (Well #1)	WME Phase 2 (Well #2)	Spring	WME Phase I Well
Conductivity	umhos/cm	370	420	415	420
pH	mg/L	7.9	7.8	7.28	7.8
TDS	mg/L	240	250	298	280
Aluminum	mg/L	ND <0.050	0.186	0.041	ND <0.050
Arsenic	mg/L	ND <0.002	ND<0.002	ND <0.005	0.0027
Barium	mg/L	ND <0.100	0.016	0.017	ND <0.100
Calcium	mg/L	37	40	53.7	37
Iron	mg/L	ND <0.020	0.401	0.110	ND <0.100
Lead	mg/L	ND <0.005	ND<0.005	0.011	ND <0.005
Magnesium	mg/L	6.2	6.48	10.8	5.4
Potassium	mg/L	4.4	4.22	4.87	3.3
Sodium	mg/L	29	24.6	19.3	35
Zinc	mg/L	0.093	ND<0.01	0.036	ND <0.050
Total Hardness	mg/L	120	126	178	120
Nitrate (as N)	mg/L	0.23	0.7	0.10	2.0
Chloride	mg/L	3.3	6.0	2.0	5.2
Sulfate	mg/L	53	78	55	79
Nitrite (as N)	mg/L	ND <0.10	ND<0.33	ND <0.1	ND <0.40
Alkalinity ($CaCO_3$)	mg/L	ND <3.0	107	160	110
Bicarbonate	mg/L	150	131	195	140
Total Cyanide	mg/L	ND <0.10	ND<0.01	ND <0.01	ND <0.100

[m] White Mountain Mutual Water Company, May 2005.
[n] Assumptions based on data provided by Philip Williams & Associates, 1980, The Hydrology of the Benton, Hammil, and Chalfant Valleys, Mono County, California, Final Report; March, pages 1 – 2, 19.
[o] Task 1 Report – Preliminary Data Collection and Hydrologic Models for the U.S. Filter Tri-Valley Surplus Groundwater Program, Mono County, California, MHA Environmental Consulting, Inc.; March 9, 2001, page 5-20.

Comparison of Selected Water Quality Parameters					
Parameter	Units	WME Phase 2 (Well #1)	WME Phase 2 (Well #2)	Spring	WME Phase I Well
Fluoride	mg/L	0.4	0.43	0.19	0.5
MBAS	mg/L	ND <0.05	ND<0.04	ND <0.04	ND <0.05
Mercury	mg/L	ND <0.001	ND<0.0004	ND <0.0004	ND <0.001
Radioactivity	pCi/L	2.38 (+/- 1.43)	1.9 (+/- 2.2)	2.0 (+/-2.3)	Not Analyzed
Anions	mEq/L	3.6	3.95	4.41	4.11
Cations	mEq/L	3.7	3.71	4.53	3.9

Based on the results of the laboratory analyses and comparison against current drinking water standards[P], the groundwater is suitable as a domestic drinking water source. In addition, the analytical data indicates no significant difference between water from the Phase 1 well and the two Phase 2 wells. A copy of the laboratory report is included as Attachment C.

Conclusion

Groundwater flow in the vicinity of the proposed WME Phase 2 development appears complex and should be considered a combination of groundwater flow directly from the White Mountains and groundwater flow through the Chalfant Valley. The presence of multiple faults and recharge estimate provided indicate probable additional recharge through this complex hydrogeologic system. Evaluation of the hydrogeologic conditions associated with the aquifer test performed for the recently installed Phase 2 WME Well #2 suggests that this well is screened in the main valley aquifer. In addition, the previously installed Phase 2 WME Well #1 most probably is not screened in a "confined" fault block aquifer system as initially proposed. Both wells are probably screened in the main valley aquifer. Consequently, the water supply needs of the proposed Phase 2 development very probably may be met by using the groundwater resource from the two wells. For this hydrogeologic evaluation, the data used in the interpretation and analysis provided above were derived from multiple sources and were assumed to be valid as presented. A reasonable effort was incorporated into obtaining sources pertinent to this evaluation and does not preclude the availability of additional data.

Golden State Environmental appreciates this opportunity to perform this work for White Mountain Estates and looks forward to working with you in the future. Should you have any questions or comments, please call us.

Sincerely,
Golden State Environmental

REGISTERED GEOLOGIST
DALE M. SCHNEEBERGER
NO. 4737
Exp. 9/30/06
STATE OF CALIFORNIA

REGISTERED GEOLOGIST
ROBERT L TRAYLOR
NO. 5827
STATE OF CALIFORNIA

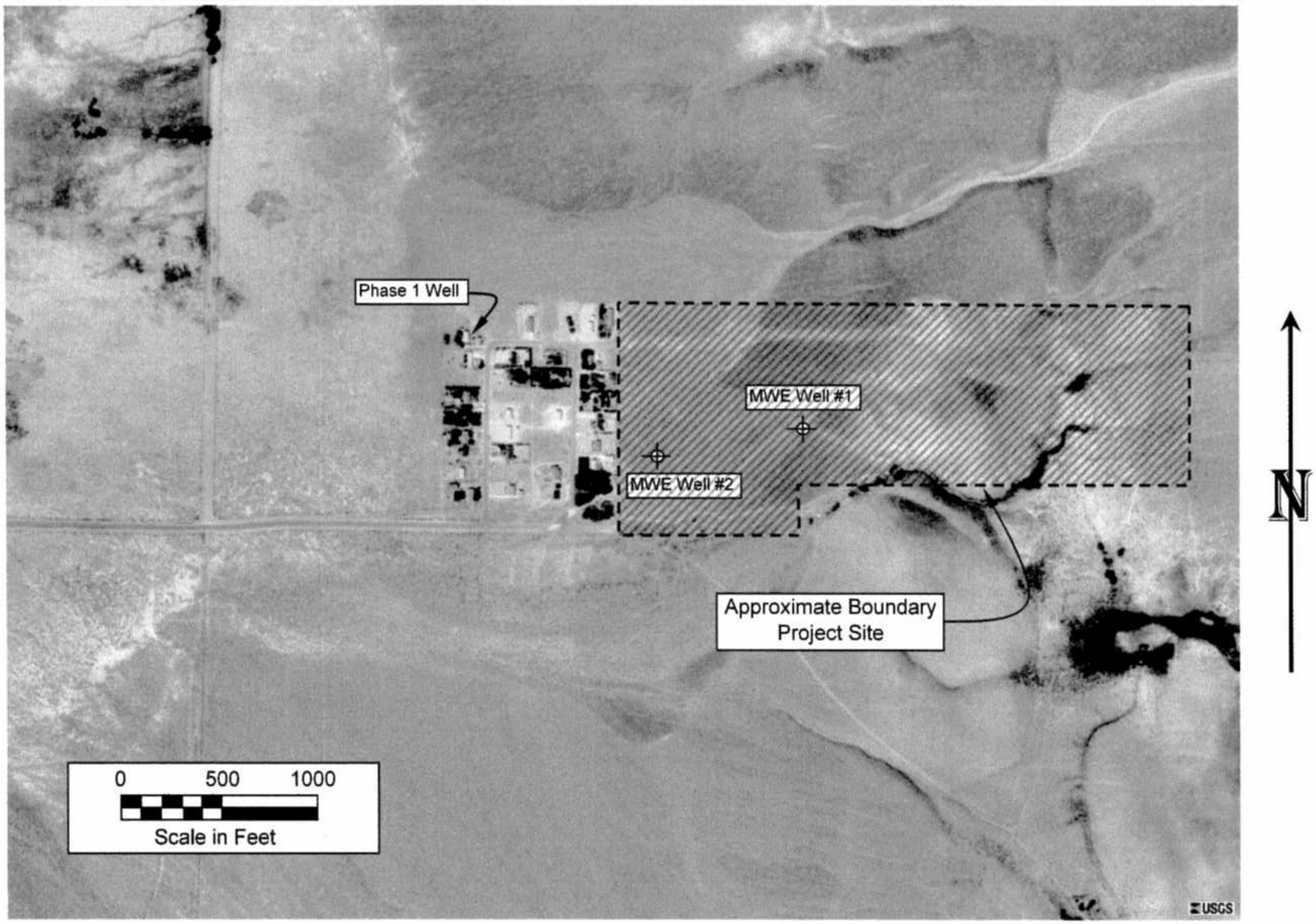
Dale Schneeberger, R.G.
Principal Geologist
8/25/05

Robert Traylor, R.G., C.Hg.
Principal Hydrogeologist

Figure
Attachments

P Title 22, CCR, Division 4, Chapter 15, Domestic Water Quality and Monitoring; September 12, 2003.

Figure



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SITE DETAIL MAP

White Mountain Estates Phase 2

FIGURE 1

Attachments

Attachment A

(Well Logs)

Project Name:	White Mountain Estates	Excavation Date: (startup)	June-05
Project Number:	2004-G017A	Excavation Method:	Mud Rotary
Client:	White Mountain Estates, LLC	Boring Diameter:	14-1/4"
Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" Class 200 PVC
		Depth to Groundwater:	135 ft BTC (pre-development)
		Total Depth of Boring:	355 ft BTC
Elevation:	Approximately 4332 feet MSL	Screen Interval(s):	255-355 ft BTC

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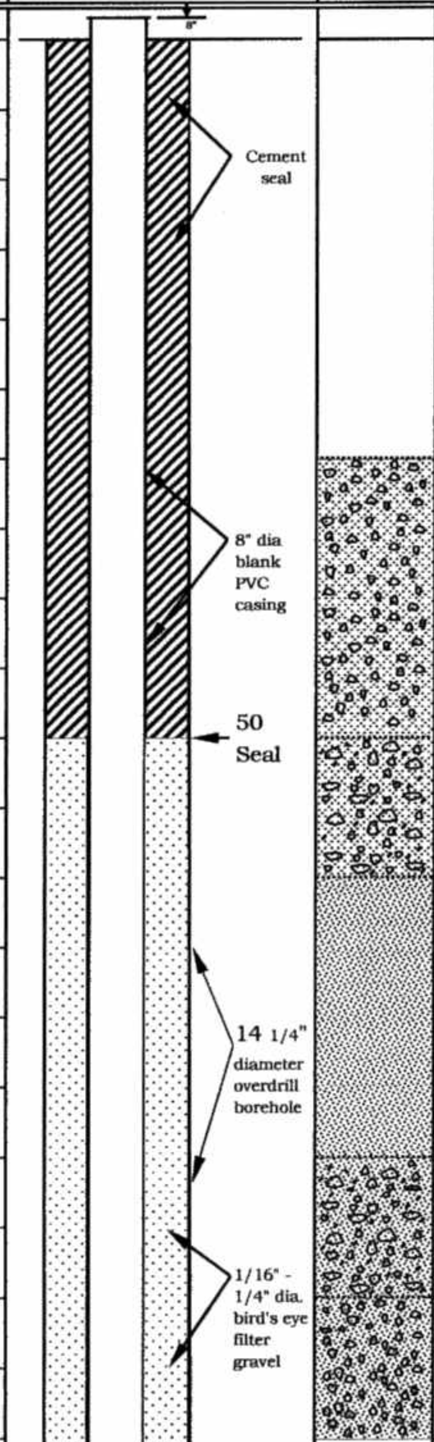
WME Well #2

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel



Sample IR	Sample R	Hammer Wt. (lbs.) Blows /foot (6"/12"/18")	Depth (feet)	USCS	Description
			0		
			5		
			10		No sample collected
			15		
			20		No sample collected
			25		
	◣		30	GP	GRAVEL: igneous and dark volcanics
			35		
	◣		40		Gravel: same as above
			45		
	◣		50	GW	Medium to coarse sandy GRAVEL: lithic fragments appear to be mostly dark volcanic/metavolcanic
			55		
	◣		60	SW	SAND with gravel: sand is medium to coarse grained, sub-angular to subrounded, mostly quartz with some dark lithics
			65		
	◣		70		SAND with gravel: same as above except sand is more coarse grained
			75		
	◣		80	GW	Coarse sandy GRAVEL: lithic fragments appear to be mostly dark volcanic/metavolcanic
			85		
	◣		90	GP	GRAVEL: subangular dark volcanics
			95		

Project Name:	White Mountain Estates	Excavation Date: (startup)	June-05
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Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" Class 200 PVC
		Depth to Groundwater:	135 ft BTC (pre-development)
		Total Depth of Boring:	355 ft BTC
Elevation:	Approximately 4332 feet MSL	Screen Interval(s):	255-355 ft BTC

I.D. WME Well #2

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel

Sample NR	Sample R	Hammer Wt. (lbs.) Blows /foot (6"/12"/18")	Depth (feet)	Well Construction	Lithology	USCS	Description
	◣		100			GW	
			105			GW	Coarse sandy GRAVEL: lithic fragments subangular dark volcanics
	◣		110			GW	Medium to coarse sandy GRAVEL: lithic fragments subangular dark volcanics; sand subangular quartz and dark lithics
			115	8" dia blank PVC casing		GW	
	◣		120			GW	Coarse sandy GRAVEL: less sand component than above
			125			GW	
	◣		130	130.76		GP	GRAVEL: subangular to subrounded dark volcanic clasts (pre-development water depth)
			135	DTW 135		GP	
	◣		140			GP	GRAVEL: same as above
			145			GP	
	◣		150			SW	SAND with gravel: sand is fine to medium grauned, subangular, mostly quartz
			155			SW	
	◣		160			GW/SW	SAND with GRAVEL: sand is fine to coarse grained subangular quartz; lithics are subangular dark volcanics
			165	14 1/4" diameter overdrill borehole		GW/SW	
	◣		170			GW	Sandy GRAVEL: sand is mostly coarse grained, sabangular quartz and dark volcanics, lithics are volcanic with some quartz
			175			GW	
	◣		180			SW/SP	SAND: mostly coarse grained, subangular quartz and dark lithic fragments, dark volcanic in nature
			185	1/16" - 1/4" dia. bird's eye filter gravel		SW/SP	
	◣		190			SW	SAND: medium to coarse grained subangular quartz and dark lithic fragments
			195			SW	

Depth Interval: 100 to 200 Feet

Project Name:	White Mountain Estates	Excavation Date: (startup)	June-05
Project Number:	2004-G017A	Excavation Method:	Mud Rotary
Client:	White Mountain Estates, LLC	Boring Diameter:	14-1/4"
Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" Class 200 PVC
		Depth to Groundwater:	135 ft BTC (pre-development)
		Total Depth of Boring:	355 ft BTC
Elevation:	Approximately 4332 feet MSL	Screen Interval(s):	255-355 ft BTC

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Hammer Wt. (lbs.) | I.D.

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel

Sample NR	Sample R	Blows /foot (6"/12"/18")	Depth (feet)	Well Construction	Lithology	USCS	Description
			200			SW/SP	SAND: medium to coarse grained subangular quartz and dark lithic fragments
			205				
			210	8" dia blank PVC casing		GW	Sandy GRAVEL: sand is coarse grained, subangular to subangular quartz; lithic appear to be dark volcanic; there is a light colored silt component also
			215				
			220			SM	Silty SAND: fine to coarse grained, subangular to subround quartz in a light colored silt matrix with fine silt fragments
			225				
			230	14 1/4" diameter overdrill borehole			Silty SAND: same as above but slighty more coarse
			235				
			240			SW	SAND with gravel: sand is fine to coarse grained, subangular quartz; lithics are light and dark volcanic/metavolcanic
			245				
			250				SAND with gravel: same as above except slight increase in lithic clast size
			255	255 TOS			
			260			GW	Fine to coarse sand GRAVEL: lithic fragments appear to be dark/gray volcanic/metavolcanic; sand is fine to coarse grained, subangular, mostly quartz
			265				
			270	0.032" slotted PVC 8" casing		SM	Silty SAND: fine to very coarse grained, subangular to subrounded, mostly quartz and igneous/metamorphics
			275				
			280			GM	Silty to medium sandy GRAVEL: mostly subangular quartz; lithic fragments appear to be volcanic or metasedimentary
			285	1/16" - 1/4" dia. bird's eye filter gravel			
			290				Fine to coarse sandy GRAVEL: mostly subangular to subrounded quartz with dark lithic fragments, large lithic fragments appear to be volcanic or metasedimentary; trace silt
			295				

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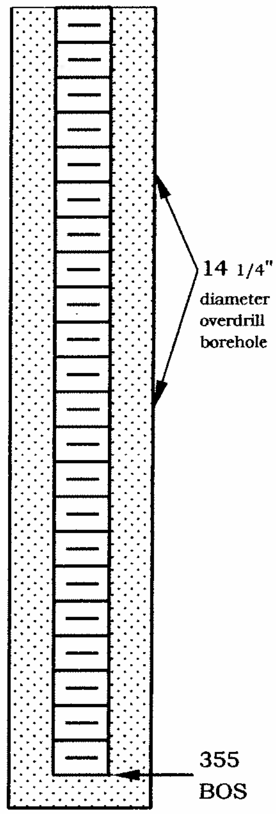
Client:	White Mountain Estates, LLC	Boring Diameter:	14-1/4"
Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" Class 200 PVC
		Depth to Groundwater:	135 ft BTC (pre-development)
		Total Depth of Boring:	355 ft BTC
Elevation:	Approximately 4332 feet MSL	Screen Interval(s):	255-355 ft BTC

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel

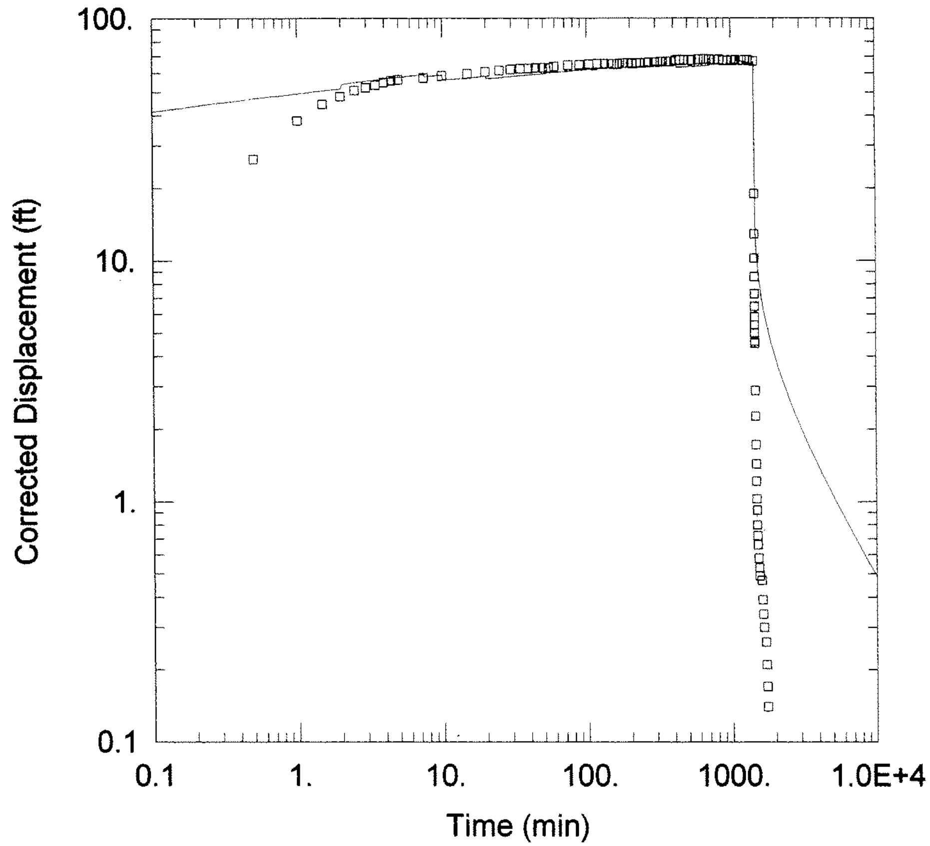
Sample NR	Sample R	Hammer Wt. (lbs.) Blows /foot (6"/12"/18")	Depth (feet)	I.D. Well Construction	Lithology	USCS	Description
			300				No sample collected
			305				
			310				No sample collected
			315				
			320				No sample collected
			325				
			330				No sample collected
			335				
			340				No sample collected
			345				
			350				No sample collected
			355				Total depth of pilot boring 355 feet below surface grade
			360				
			365				
			370				
			375				
			380				
			385				
			390				
			395				



Attachment B

(Aquifer Data)

Unconfined Aquifer



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/01/05 Time: 15:17:00

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

$T = 0.5883\ ft^2/min$
$S = 2.187E-6$
$Kz/Kr = 0.5$
$b = 220.\ ft$

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/01/05
Time: 15:18:17

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 220. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.5859	ft^2/min
S	9.476E-6	
Kz/Kr	0.5	
b	220.	ft

K = T/b = 0.002663 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.5883	0.05393	ft^2/min
S	2.187E-6	3.607E-6	
Kz/Kr	0.5	not estimated	
b	220.	not estimated	ft

K = T/b = 0.002674 ft/min

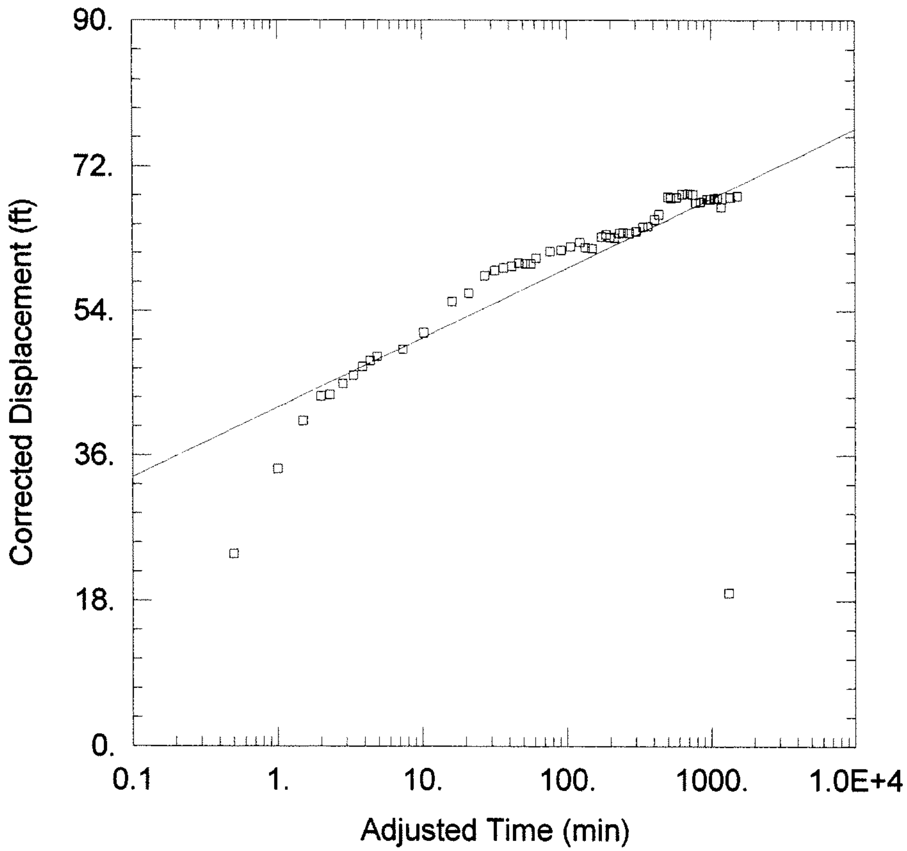
Parameter Correlations

	T	S
T	1.00	-0.99
S	-0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 9135.4 ft^2
Variance . . . . 107.5 ft^2
Std. Deviation . . . . 10.37 ft
Mean. . . . . -3.093 ft
No. of Residuals 87
No. of Estimates 2



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/01/05 Time: 15:20:16

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Unconfined
Solution Method: Cooper-Jacob

T = 0.4836 ft^2/min
S = 4.579E-5

AQUIFER DATA

Saturated Thickness: 220. ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/01/05
Time: 15:20:56

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 220. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Cooper-Jacob

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.5883	ft^2/min
S	2.187E-6	

K = T/b = 0.002674 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.4836	0.05115	ft^2/min
S	4.579E-5	7.136E-5	

K = T/b = 0.002198 ft/min

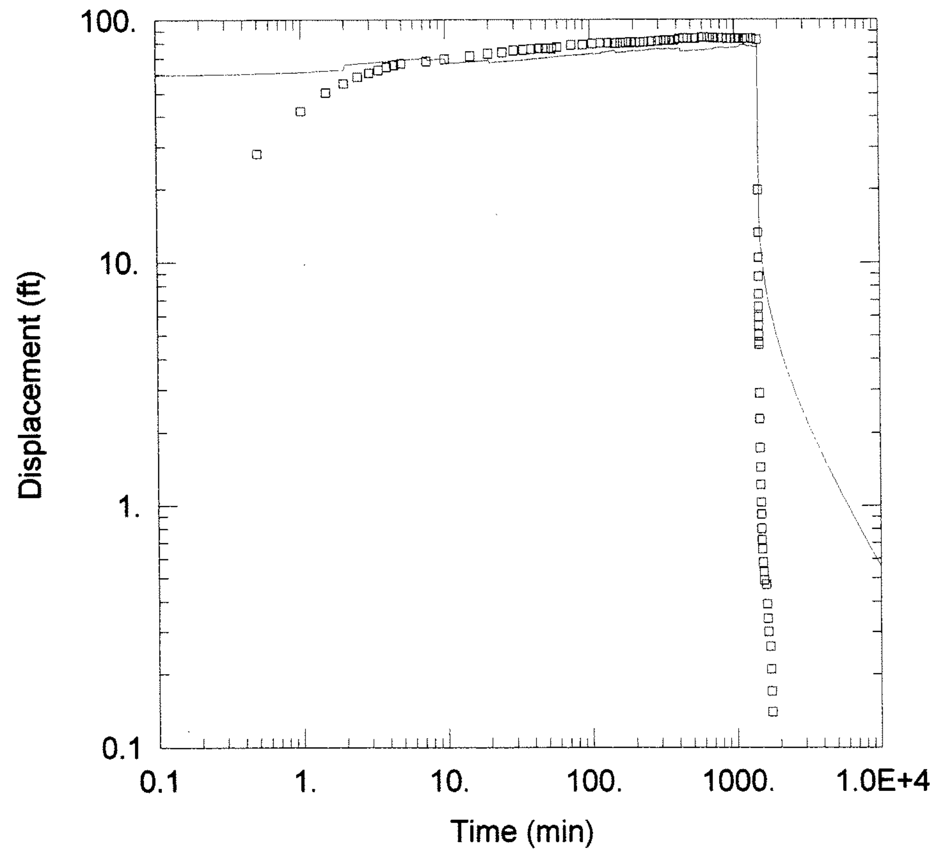
Parameter Correlations

	T	S
T	1.00	-0.99
S	-0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 5423.8 ft^2
Variance . . . . 100.4 ft^2
Std. Deviation . . . . 10.02 ft
Mean. . . . . 0.001778 ft
No. of Residuals 56
No. of Estimates 2



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/04/05 Time: 15:50:00

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.5136 ft^2/min
S = 2.187E-6
Sy = 0.001
ß = 0.0002452

AQUIFER DATA

Saturated Thickness: 220. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Earlier

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

VISUAL ESTIMATION RESULTS

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn 24-hr Test.aqt
Date: 08/04/05
Time: 15:46:25

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Location: Chalfant Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 220. ft
Anisotropy Ratio (Kz/Kr): 59.91

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 22

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	200.	240.	178.
1.5	190.	300.	177.
2.	200.	360.	175.
7.5	195.	420.	170.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

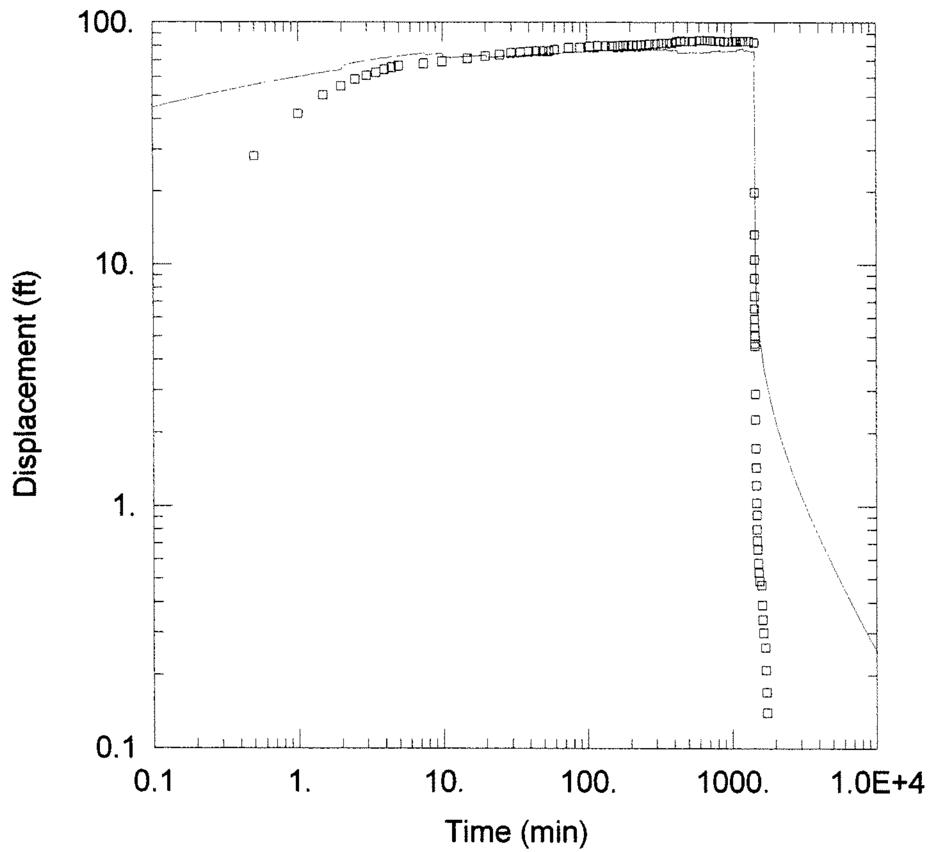
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.451	ft^2/min
S	2.592E-6	
Sy	0.001	
ß	0.001	

K = T/b = 0.00205 ft/min

Leaky Aquifer



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/04/05 Time: 16:37:33

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 0.5955 ft^2/min
S = 0.0008664
ß = 0.000871
Kz/Kr = 0.5
b = 220. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/04/05
Time: 16:37:46

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 220. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.8225	ft^2/min
S	2.708E-7	
ß	1.0E-5	
Kz/Kr	0.5	
b	220.	ft

K = T/b = 0.003738 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.5955	0.6261	ft^2/min
S	0.0008664	0.003919	
ß	0.000871	0.02163	
Kz/Kr	0.5	not estimated	
b	220.	not estimated	ft

K = T/b = 0.002707 ft/min

Parameter Correlations

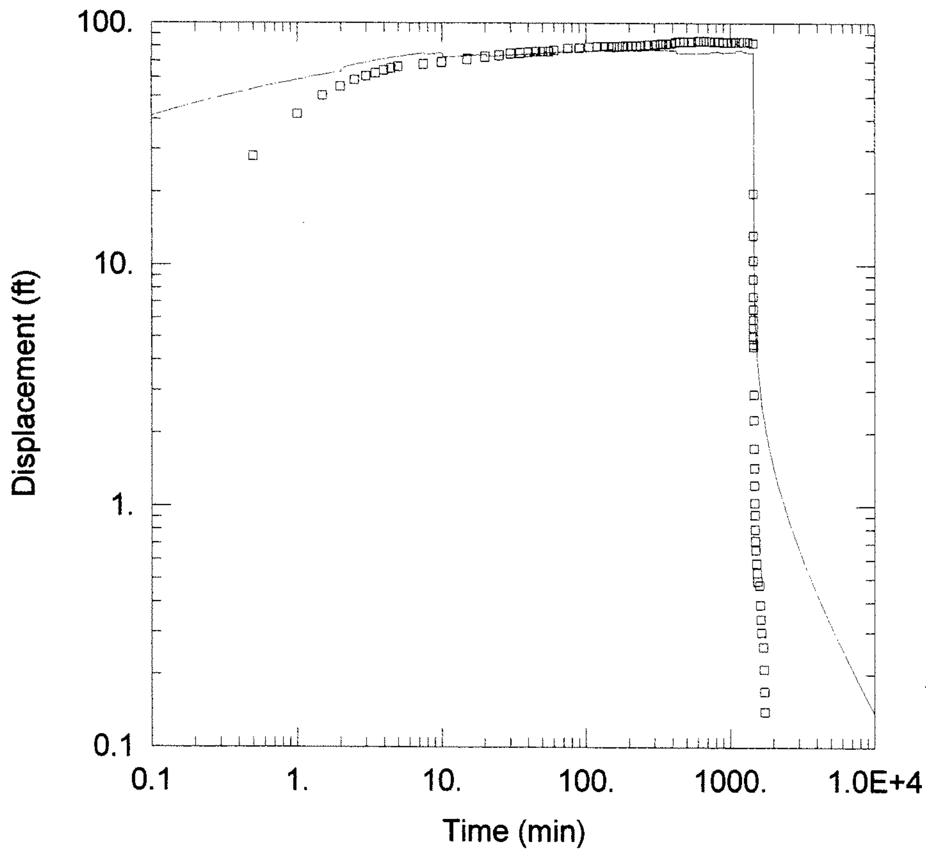
	T	S	ß
T	1.00	-1.00	-1.00
S	-1.00	1.00	0.99
ß	-1.00	0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 8063.2 ft^2
Variance . . . . 95.99 ft^2
Std. Deviation . . . . 9.798 ft
Mean. . . . . -2.272 ft
No. of Residuals 87

No. of Estimates 3



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/04/05 Time: 17:13:38

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 1.21 ft^2/min
S = 0.00522
ß = 0.0005205
Kz/Kr = 0.5
b = 500. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/04/05
Time: 17:14:04

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 500. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	1.365	ft^2/min
S	2.187E-6	
ß	0.0001412	
Kz/Kr	0.5	
b	500.	ft

K = T/b = 0.00273 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	1.21	0.7808	ft^2/min
S	0.00522	0.012	
ß	0.0005205	0.01788	
Kz/Kr	0.5	not estimated	
b	500.	not estimated	ft

K = T/b = 0.002419 ft/min

Parameter Correlations

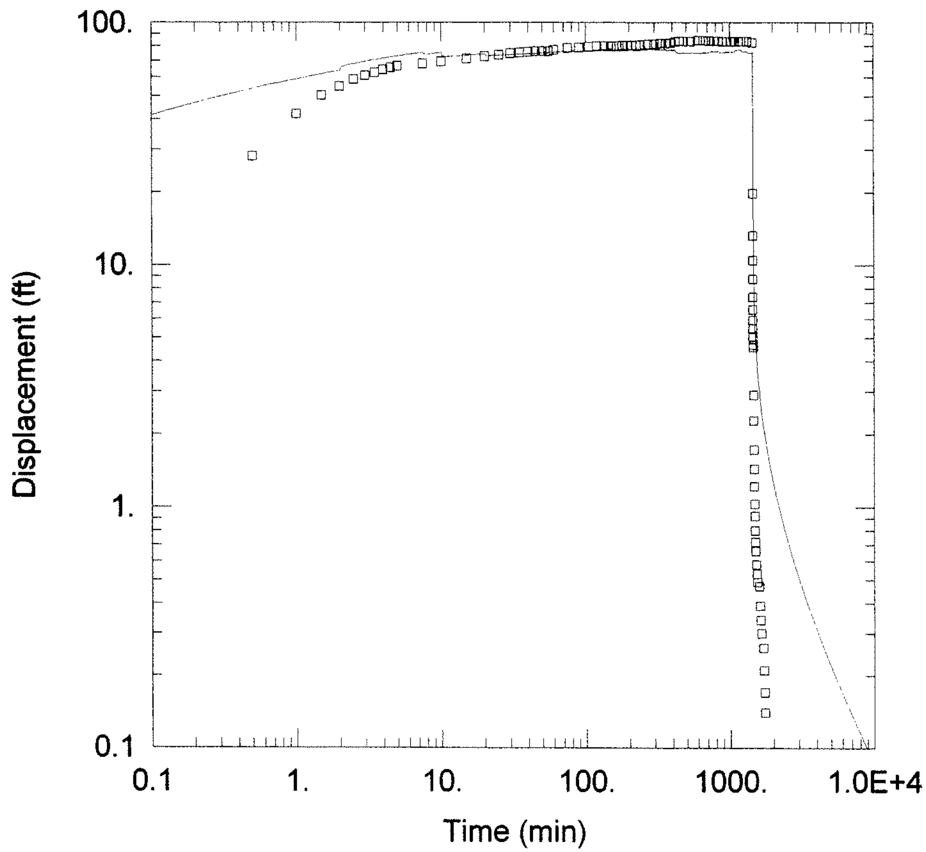
	T	S	ß
T	1.00	-0.99	-1.00
S	-0.99	1.00	0.99
ß	-1.00	0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 7486.9 ft^2
Variance . . . . 89.13 ft^2
Std. Deviation . . . . 9.441 ft
Mean. . . . . -1.971 ft
No. of Residuals 87

No. of Estimates 3



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/04/05 Time: 17:54:06

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 2.44 ft^2/min
S = 0.009758
ß = 0.0002776
Kz/Kr = 0.5
b = 1000. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/04/05
Time: 17:54:19

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 1000. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	1.21	ft^2/min
S	0.00522	
ß	0.0005205	
Kz/Kr	0.5	
b	1000.	ft

K = T/b = 0.00121 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	2.44	1.816	ft^2/min
S	0.009758	0.03269	
ß	0.0002776	0.01687	
Kz/Kr	0.5	not estimated	
b	1000.	not estimated	ft

K = T/b = 0.00244 ft/min

Parameter Correlations

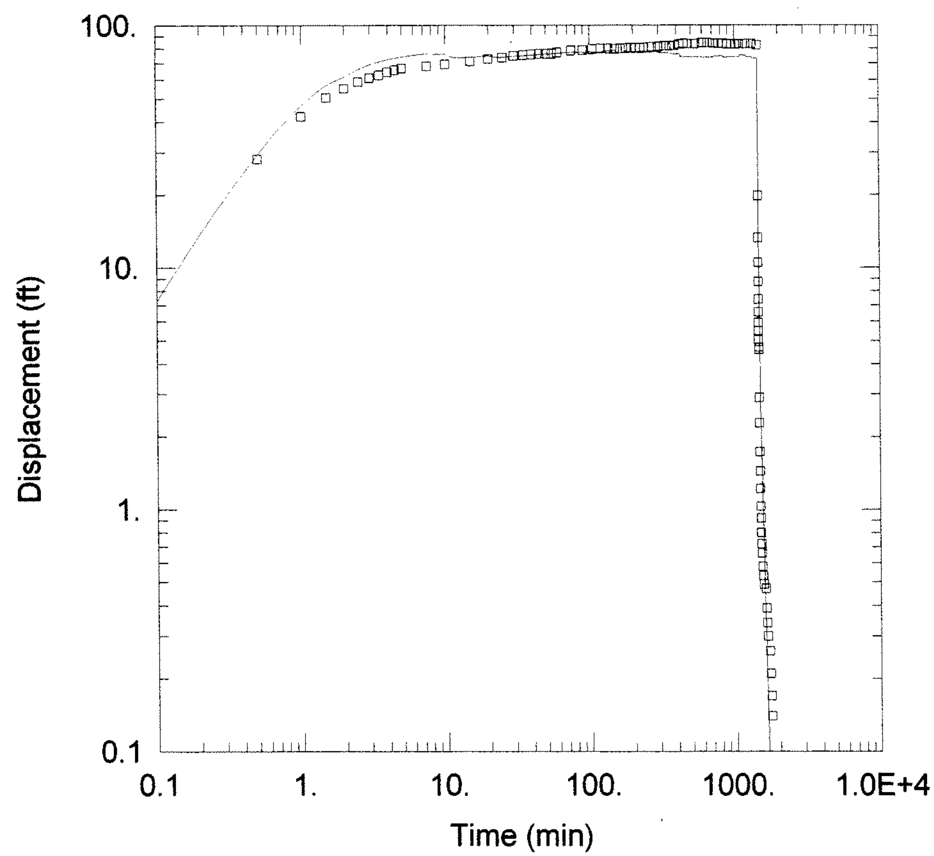
	T	S	ß
T	1.00	-1.00	-1.00
S	-1.00	1.00	0.99
ß	-1.00	0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 7435.9 ft^2
Variance . . . . 88.52 ft^2
Std. Deviation. . . . . 9.409 ft
Mean. . . . . -1.913 ft
No. of Residuals 87

No. of Estimates 3



WELL TEST ANALYSIS

Data Set: C:\...\White Mtn 24-hr Test.aqt
Date: 08/04/05 Time: 12:49:19

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Location: Chalfant Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Moench (Case 1)

T = 0.3298 ft^2/min
S = 0.03336
r/B = 0.2757
ß = 1.101E-5
Sw = 5.189
r(w) = 7.746 ft

AQUIFER DATA

Saturated Thickness: 220. ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn 24-hr Test.aqt
Date: 08/04/05
Time: 12:49:27

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Location: Chalfant Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 220. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 22

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	200.	150.	177.	840.	170.
1.5	190.	180.	178.	1080.	173.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
2.	200.	210.	177.	1200.	170.
7.5	195.	240.	178.	1320.	168.
10.	185.	300.	177.	1440.	171.
20.	180.	360.	175.	1440.5	0.
105.	179.	420.	170.		
120.	181.	720.	172.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	180.	80.36	1442.	8.74
1.	42.14	195.	80.45	1442.5	7.4
1.5	50.52	210.	80.22	1443.	6.55
2.	54.96	225.	80.62	1443.5	5.92
2.5	58.74	240.	80.76	1444.	5.45
3.	60.89	270.	81.22	1445.	5.06
3.5	62.66	300.	81.61	1447.5	4.69
4.	64.45	330.	81.94	1450.	4.58
4.5	65.62	360.	82.04	1455.	2.9
5.	66.49	390.	82.24	1460.	2.27
7.5	68.05	420.	83.29	1465.	1.73
10.	69.39	450.	83.69	1470.	1.44

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
15.	71.15	480.	83.44	1475.	1.22
20.	72.86	540.	83.59	1480.	1.03
25.	73.79	600.	84.24	1485.	0.92
30.	74.8	660.	84.29	1490.	0.8
35.	75.34	720.	84.14	1495.	0.72
40.	75.64	780.	83.74	1500.	0.66
45.	76.27	840.	83.94	1515.	0.58
50.	76.13	900.	83.24	1530.	0.53
55.	76.14	960.	83.24	1545.	0.49
60.	77.24	1020.	83.39	1600.	0.47
75.	78.64	1080.	83.44	1615.	0.39
90.	78.85	1200.	83.49	1630.	0.34
105.	79.62	1320.	83.55	1645.	0.3
120.	79.94	1440.	82.55	1700.	0.26
135.	79.94	1440.5	19.83	1715.	0.21
150.	79.85	1441.	13.24	1730.	0.17
165.	79.93	1441.5	10.44	1745.	0.14

SOLUTION

Aquifer Model: Leaky
Solution Method: Moench (Case 1)

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.3298	ft^2/min
S	0.03336	
r/B	0.2757	
ß	1.06E-5	
Sw	5.189	
r(w)	7.746	ft

K = T/b = 0.001499 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.3298	2.172	ft^2/min
S	0.03336	21.25	
r/B	0.2757	3.763	
ß	1.101E-5	1575.5	
Sw	5.189	33.	
r(w)	7.746	2509.2	ft

K = T/b = 0.001499 ft/min

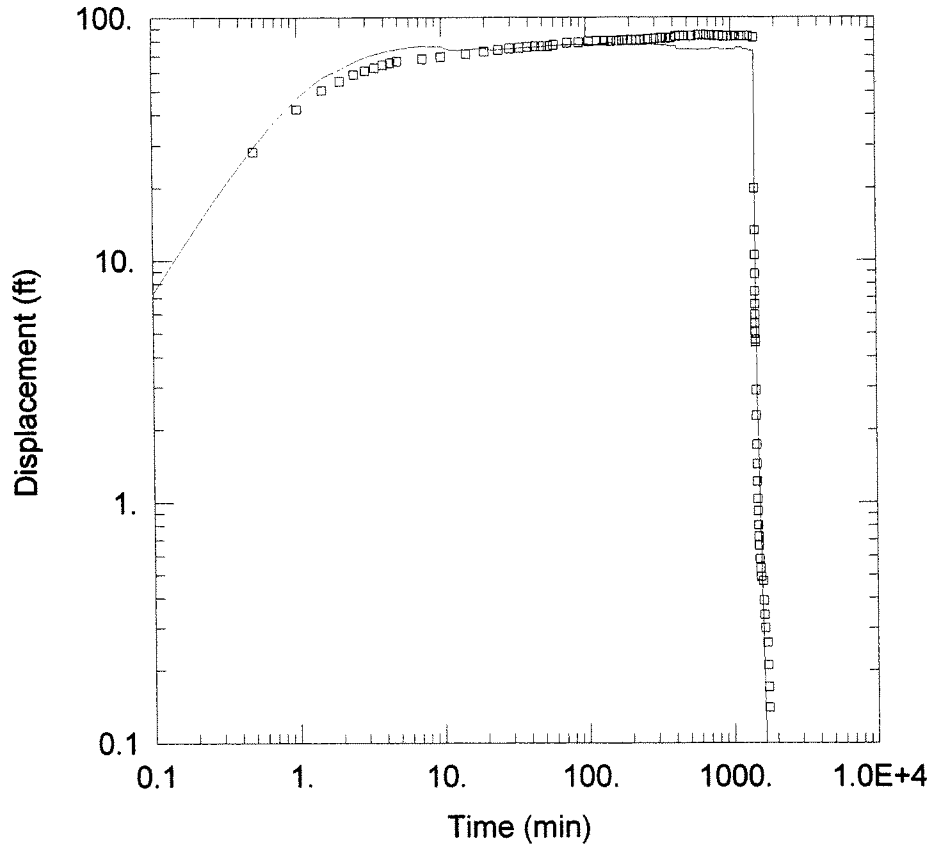
Parameter Correlations

	T	S	r/B	ß	Sw	r(w)
T	1.00	0.81	-1.00	-0.05	1.00	-0.82
S	0.81	1.00	-0.77	-0.02	0.82	-1.00
r/B	-1.00	-0.77	1.00	0.05	-0.99	0.78
ß	-0.05	-0.02	0.05	1.00	-0.04	0.02
Sw	1.00	0.82	-0.99	-0.04	1.00	-0.82
r(w)	-0.82	-1.00	0.78	0.02	-0.82	1.00

Residual Statistics

for weighted residuals

Sum of Squares. . . 7723.6 ft^2
Variance . . . . 95.35 ft^2
Std. Deviation . . . . . 9.765 ft
Mean . . . . -1.038 ft
No. of Residuals . . 87
No. of Estimates . . 6



WELL TEST ANALYSIS

Data Set: C:\...\White Mtn 24-hr Test.aqt
Date: 08/04/05 Time: 12:47:26

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Location: Chalfant Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Moench (Case 1)

T = 0.3298 ft^2/min
S = 0.03336
r/B = 0.2757
ß = 1.06E-5
Sw = 5.189
r(w) = 7.746 ft

AQUIFER DATA

Saturated Thickness: 500. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn 24-hr Test.aqt
Date: 08/04/05
Time: 12:47:13

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Location: Chalfant Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 500. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 22

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	200.	240.	178.
1.5	190.	300.	177.
2.	200.	360.	175.
7.5	195.	420.	170.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Leaky
Solution Method: Moench (Case 1)

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.3722	ft^2/min
S	0.03319	
r/B	0.2192	
ß	1.075E-5	
Sw	5.865	
r(w)	6.877	ft

K = T/b = 0.0007443 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.3298	2.185	ft^2/min
S	0.03336	21.47	
r/B	0.2757	3.78	
ß	1.06E-5	1489.1	
Sw	5.189	33.22	
r(w)	7.746	2533.7	ft

K = T/b = 0.0006596 ft/min

Parameter Correlations

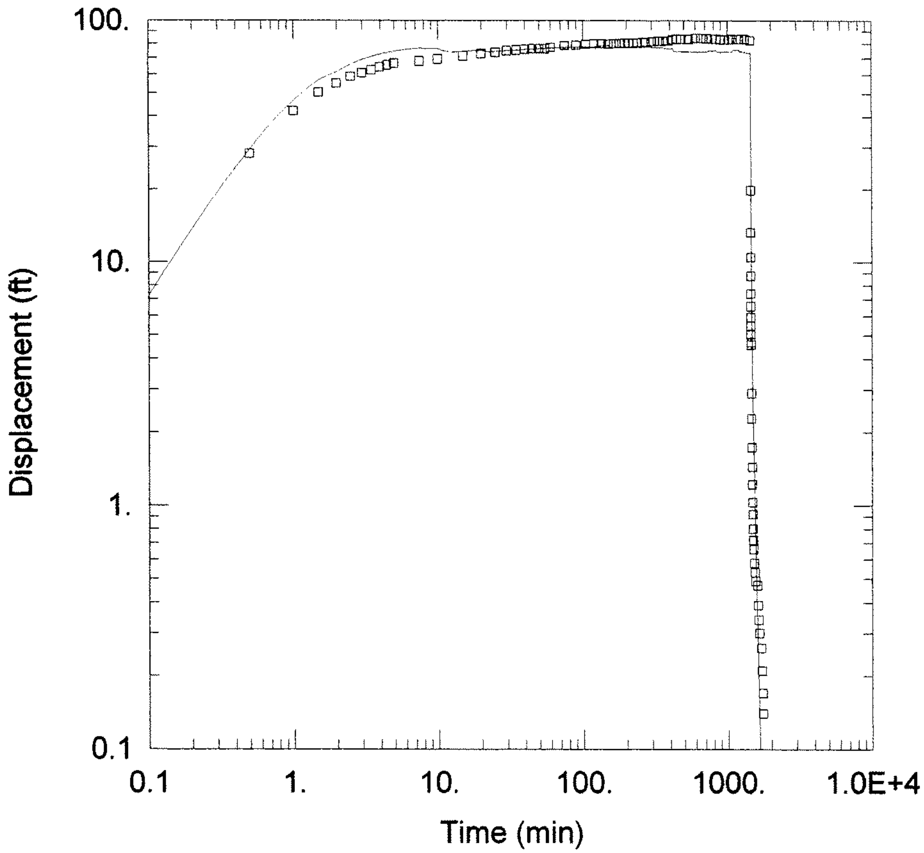
	T	S	r/B	ß	Sw	r(w)
T	1.00	0.81	-1.00	-0.12	1.00	-0.82
S	0.81	1.00	-0.78	-0.14	0.82	-1.00
r/B	-1.00	-0.78	1.00	0.11	-0.99	0.79
ß	-0.12	-0.14	0.11	1.00	-0.12	0.14
Sw	1.00	0.82	-0.99	-0.12	1.00	-0.83
r(w)	-0.82	-1.00	0.79	0.14	-0.83	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 7723.6 ft^2
Variance . . . . 95.35 ft^2

Std. Deviation . . . . 9.765 ft
Mean. . . . . -1.038 ft
No. of Residuals 87
No. of Estimates 6



WELL TEST ANALYSIS

Data Set: C:\...\White Mtn 24-hr Test.aqt
Date: 08/04/05 Time: 13:01:55

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Location: Chalfant Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Moench (Case 1)

T = 0.3298 ft^2/min
S = 0.03328
r/B = 0.2758
ß = 1.144E-5
Sw = 5.189
r(w) = 7.735 ft

AQUIFER DATA

Saturated Thickness: 1000. ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

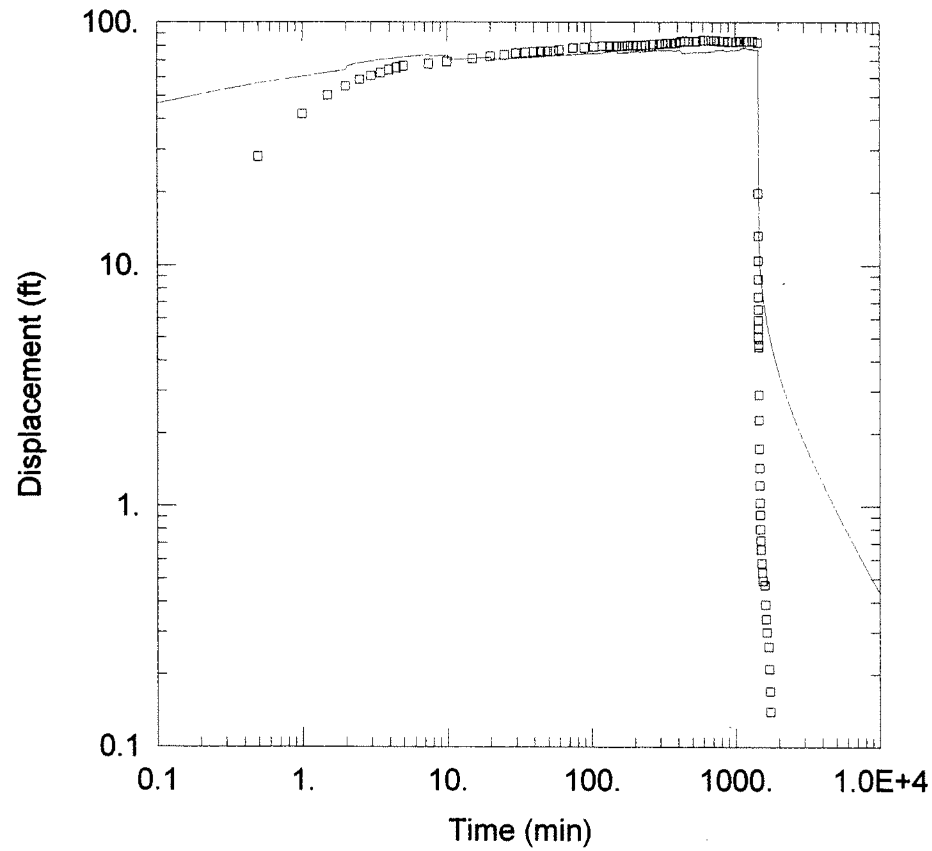
Aquifer Model: Leaky
Solution Method: Moench (Case 1)

VISUAL ESTIMATION RESULTS

Estimated Parameters

Std. Deviation . . . . 9.765 ft
Mean. . . . . -1.042 ft
No. of Residuals 87
No. of Estimates 6

Confined Aquifer



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/04/05 Time: 16:06:19

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 0.6569 ft^2/min
S = 0.0004107
Kz/Kr = 0.5
b = 220. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/04/05
Time: 16:06:40

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 220. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Estimated Parameters

Parameter	Estimate	
T	1.24	ft^2/min
S	0.004735	
Kz/Kr	0.5	
b	220.	ft

K = T/b = 0.005638 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.6569	0.02759	ft^2/min
S	0.0004107	0.0003477	
Kz/Kr	0.5	not estimated	
b	220.	not estimated	ft

K = T/b = 0.002986 ft/min

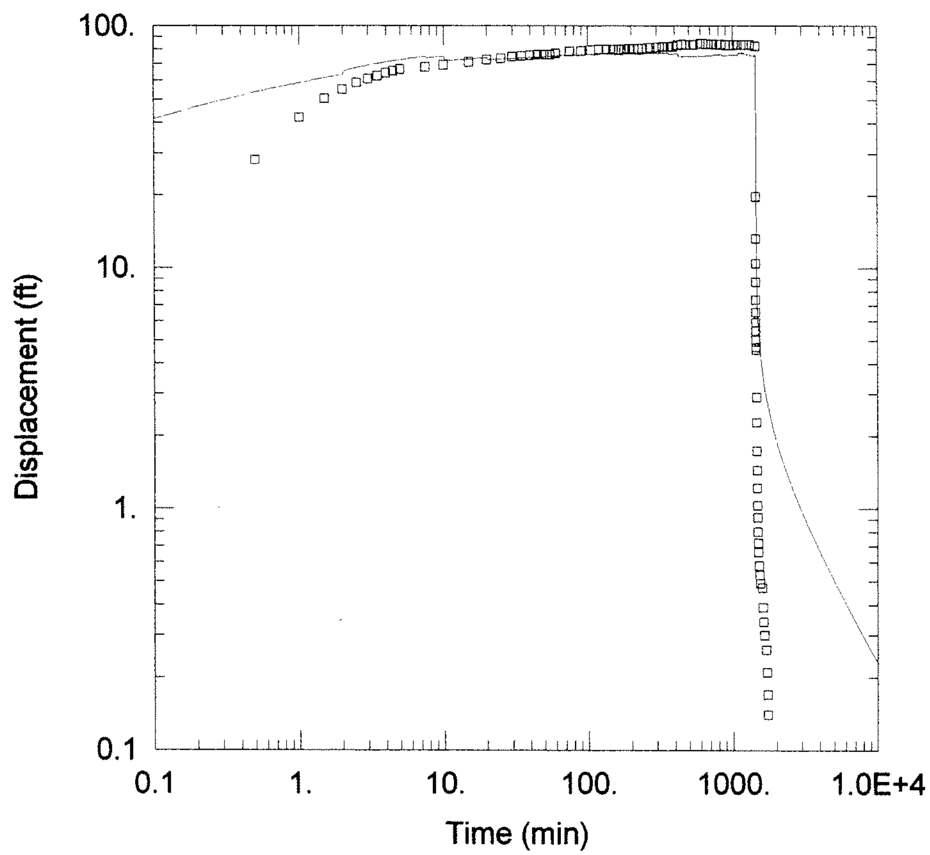
Parameter Correlations

	T	S
T	1.00	-0.88
S	-0.88	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 9143.6 ft^2
Variance . . . . 107.6 ft^2
Std. Deviation . . . . 10.37 ft
Mean. . . . . -2.795 ft
No. of Residuals 87
No. of Estimates 2



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/04/05 Time: 16:02:46

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 1.24 ft^2/min
S = 0.004735
Kz/Kr = 0.5
b = 500. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/04/05
Time: 16:02:57

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 500. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.6676	ft^2/min
S	2.187E-6	
Kz/Kr	0.5	
b	500.	ft

K = T/b = 0.001335 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	1.24	0.02786	ft^2/min
S	0.004735	0.001913	
Kz/Kr	0.5	not estimated	
b	500.	not estimated	ft

K = T/b = 0.002481 ft/min

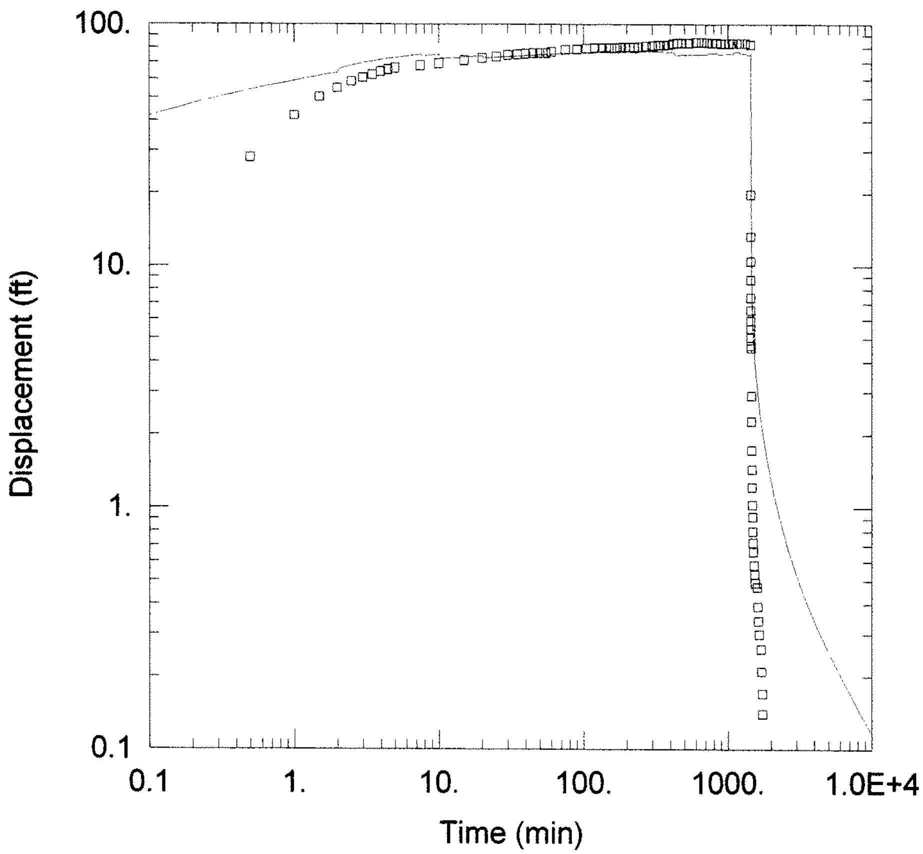
Parameter Correlations

	T	S
T	1.00	-0.61
S	-0.61	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 7680.1 ft^2
Variance . . . . 90.35 ft^2
Std. Deviation . . . . 9.505 ft
Mean. . . . . -2.126 ft
No. of Residuals 87
No. of Estimates 2



WHITE MOUNTAIN ESTATES 24-HR PUMPING TEST

Data Set: C:\...\White Mtn Well No.2 (24-hr) Test.aqt
Date: 08/04/05 Time: 16:09:17

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Well: WME Well No.2
Test Date: 7/6/05

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 2.479 ft^2/min
S = 0.008765
Kz/Kr = 0.5
b = 1000. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
WME No.2	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ WME No.2	0	0

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\White Mtn Well No.2 (24-hr) Test.aqt
Title: White Mountain Estates 24-hr Pumping Test
Date: 08/04/05
Time: 16:09:42

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates
Project: G017A
Location: Chalfont Valley, California
Test Date: 7/6/05
Test Well: WME Well No.2

AQUIFER DATA

Saturated Thickness: 1000. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.3333 ft
Wellbore Radius: 0.5833 ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of pumping periods: 21

Pumping Period Data

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
0.	190.	300.	177.
2.	200.	360.	175.

Time (min)	Rate (gal/min)	Time (min)	Rate (gal/min)
7.5	195.	420.	170.
10.	185.	720.	172.
20.	180.	840.	170.
105.	179.	1080.	173.
120.	181.	1200.	170.
150.	177.	1320.	168.
180.	178.	1440.	171.
210.	177.	1440.5	0.
240.	178.		

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: WME No.2

X Location: 0. ft
Y Location: 0. ft

Radial distance from WME No.2: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 120. ft
Depth to Bottom of Screen: 220. ft

No. of Observations: 87

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	28.2	660.	84.29
1.	42.14	720.	84.14
1.5	50.52	780.	83.74
2.	54.96	840.	83.94
2.5	58.74	900.	83.24
3.	60.89	960.	83.24
3.5	62.66	1020.	83.39
4.	64.45	1080.	83.44
4.5	65.62	1200.	83.49
5.	66.49	1320.	83.55
7.5	68.05	1440.	82.55

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
10.	69.39	1440.5	19.83
15.	71.15	1441.	13.24
20.	72.86	1441.5	10.44
25.	73.79	1442.	8.74
30.	74.8	1442.5	7.4
35.	75.34	1443.	6.55
40.	75.64	1443.5	5.92
45.	76.27	1444.	5.45
50.	76.13	1445.	5.06
55.	76.14	1447.5	4.69
60.	77.24	1450.	4.58
75.	78.64	1455.	2.9
90.	78.85	1460.	2.27
105.	79.62	1465.	1.73
120.	79.94	1470.	1.44
135.	79.94	1475.	1.22
150.	79.85	1480.	1.03
165.	79.93	1485.	0.92
180.	80.36	1490.	0.8
195.	80.45	1495.	0.72
210.	80.22	1500.	0.66
225.	80.62	1515.	0.58
240.	80.76	1530.	0.53
270.	81.22	1545.	0.49
300.	81.61	1600.	0.47
330.	81.94	1615.	0.39
360.	82.04	1630.	0.34
390.	82.24	1645.	0.3
420.	83.29	1700.	0.26
450.	83.69	1715.	0.21
480.	83.44	1730.	0.17
540.	83.59	1745.	0.14
600.	84.24		

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.6569	ft^2/min
S	0.0004107	
Kz/Kr	0.5	
b	1000.	ft

K = T/b = 0.0006569 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	2.479	0.05182	ft^2/min
S	0.008765	0.003242	
Kz/Kr	0.5	not estimated	
b	1000.	not estimated	ft

K = T/b = 0.002479 ft/min

Parameter Correlations

	T	S
T	1.00	-0.55
S	-0.55	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 7481.3 ft^2
Variance . . . . 88.02 ft^2
Std. Deviation . . . . 9.382 ft
Mean. . . . . -1.93 ft
No. of Residuals 87
No. of Estimates 2

Attachment C

(Laboratory Report)

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900

FAX 714/538-1209

CLIENT Golden State Enviromental (10957)
ATTN: Dale Schneeberger
15051 Leffingwell Rd.
Suite #102
Whittier, CA 90604

LAB REQUEST 153682

REPORTED 07/27/2005

RECEIVED 07/14/2005

PROJECT White Mtn Estates

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	**Client Sample Identification**
636390	WMW-2
636391	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing , all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical
Microbiological
Environmental

Order #: 636390 **Client:** Golden State Enviromental

Matrix: WATER **Client Sample ID:** WMW-2

Date Sampled: 07/07/2005 **Sample Description:** Water Quality Samples

Time Sampled: 19:20

Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
50.1 pH						
pH	7.80	1		NA	07/18/05	NA
200.7 ICP Total Metals - Water Only						
Aluminum	0.186	1	0.030	mg/L	07/25/05	KN
Barium	0.016	1	0.010	mg/L	07/25/05	KN
Calcium	40.0	1	0.1	mg/L	07/25/05	KN
Copper	ND	1	0.01	mg/L	07/25/05	KN
Iron	0.401	1	0.02	mg/L	07/25/05	KN
Magnesium	6.48	1	0.1	mg/L	07/25/05	KN
Manganese	ND	1	0.01	mg/L	07/25/05	KN
Potassium	4.22	1	0.5	mg/L	07/25/05	KN
Sodium	24.6	1	0.1	mg/L	07/25/05	KN
Zinc	ND	1	0.01	mg/L	07/25/05	KN
200.8 Metals by ICP/MS						
Arsenic	ND	1	0.002	mg/L	08/15/05	NK
Lead	ND	1	0.005	mg/L	08/15/05	NK
2320B Total Alkalinity						
Bicarbonate	131	1	5.0	mg/L	07/18/05	NA
Carbonate	ND	1	5.0	mg/L	07/18/05	NA
Hydroxide	ND	1	5.0	mg/L	07/18/05	NA
Total Alkalinity as CaCO3	107	1	5.0	mg/L	07/18/05	NA
2340B Total Hardness						
Total Hardness	126	1	0.5	mg/L	07/26/05	BGS

245.1 Mercury in Water by Manual Cold Vapor

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 636390 **Client:** Golden State Enviromental
Matrix: WATER **Client Sample ID:** WMW-2
Date Sampled: 07/07/2005 **Sample Description:** Water Quality Samples
Time Sampled: 19:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
45.1 Mercury in Water by Manual Cold Vapor						
Mercury	ND	1	0.0004	mg/L	08/10/05	MDJ
2510B Specific Conductance						
Specific Conductance	420	1	1.0	umhos/cm	07/18/05	LN
540C Total Dissolved Solids						
Total Dissolved Solids	250	1	10.0	mg/L	07/18/05	LN
300.0 Nitrate as NO3 by Ion Chromatography						
Nitrate (as NO3)	0.7	1	0.44	mg/L	07/15/05	RC
Chloride	6.0	1	1.0	mg/L	07/15/05	RC
Sulfate	78	1	1.0	mg/L	07/21/05	RC
Nitrite (as NO2)	ND	1	0.33	mg/L	07/15/05	RC
335.4 Cyanide, Total and Amenable to Chlorination						
Cyanide, Total	ND	1	0.01	mg/L	07/20/05	GP
25.1 MBAS (Methylene Blue Active Substances)						
MBAS	ND	1	0.04	mg/L	07/15/05	HK
4500-F Fluoride by ISE						
Fluoride	0.43	1	0.05	mg/L	07/15/05	NA
00.0 Radioactivity - Gross Alpha and Beta						
Radioactivity - Gross Alpha	1.9+/-2.2	1	1.0	pCi/L	07/21/05	QP

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 636390 **Client:** Golden State Enviromental
Matrix: WATER **Client Sample ID:** WMW-2
Date Sampled: 07/07/2005 **Sample Description:** Water Quality Samples
Time Sampled: 19:20
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
Ion Balance						
Anions	3.95	1		mEq/L	07/26/05	BGS
Cations	3.71	1		mEq/L	07/26/05	BGS

Order #: 636391

Matrix: WATER

Date Sampled:

Time Sampled:

Sampled By:

Client: Golden State Enviromental

Client Sample ID: Laboratory Method Blank

Analyte	Result	DF	DLR	Units	Date	Analyst
150.1 pH						
pH	5.75	1		NA	07/18/05	NA
200.7 ICP Total Metals - Water Only						
Aluminum	ND	1	0.030	mg/L	07/25/05	KN
Barium	ND	1	0.010	mg/L	07/25/05	KN
Calcium	ND	1	0.10	mg/L	07/25/05	KN
Copper	ND	1	0.010	mg/L	07/25/05	KN
Iron	ND	1	0.020	mg/L	07/25/05	KN
Magnesium	ND	1	0.10	mg/L	07/25/05	KN
Manganese	ND	1	0.010	mg/L	07/25/05	KN
Potassium	ND	1	0.50	mg/L	07/25/05	KN
Sodium	ND	1	0.10	mg/L	07/25/05	KN
Zinc	ND	1	0.010	mg/L	07/25/05	KN
200.8 Metals by ICP/MS						
Arsenic	ND	1	0.002	mg/L	08/15/05	NK
Lead	ND	1	0.005	mg/L	08/15/05	NK
2320B Total Alkalinity						
Bicarbonate	ND	1	5.0	mg/L	07/18/05	NA
Carbonate	ND	1	5.0	mg/L	07/18/05	NA
Hydroxide	ND	1	5.0	mg/L	07/18/05	NA
Total Alkalinity as CaCO3	ND	1	5.0	mg/L	07/18/05	NA
2340B Total Hardness						
Total Hardness	ND	1	0.5	mg/L	07/26/05	BGS
245.1 Mercury in Water by Manual Cold Vapor						

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 636391 **Client:** Golden State Enviromental
Matrix: WATER **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
245.1 Mercury in Water by Manual Cold Vapor						
Mercury	ND	1	0.0004	mg/L	08/10/05	MDJ
2510B Specific Conductance						
Specific Conductance	0.97	1	1.0	umhos/cm	07/18/05	LN
2540C Total Dissolved Solids						
Total Dissolved Solids	ND	1	10.0	mg/L	07/18/05	LN
300.0 Nitrate as NO3 by Ion Chromatography						
Nitrate (as NO3)	ND	1	0.44	mg/L	07/15/05	RC
Chloride	ND	1	1.0	mg/L	07/15/05	RC
Sulfate	ND	1	1.0	mg/L	07/21/05	RC
Nitrite (as NO2)	ND	1	0.33	mg/L	07/15/05	RC
335.4 Cyanide, Total and Amenable to Chlorination						
Cyanide, Total	ND	1	0.01	mg/L	07/20/05	GP
425.1 MBAS (Methylene Blue Active Substances)						
MBAS	ND	1	0.04	mg/L	07/15/05	HK
4500-F Fluoride by ISE						
Fluoride	ND	1	0.05	mg/L	07/15/05	NA
900.0 Radioactivity - Gross Alpha and Beta						
Radioactivity - Gross Alpha	ND	1	1.0	pCi/L	07/21/05	QP

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 636391 **Client:** Golden State Enviromental
Matrix: WATER **Client Sample ID:** Laboratory Method Blank
Date Sampled:
Time Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
Ion Balance						
Anions	ND	1		mEq/L	07/26/05	BGS
Cations	ND	1		mEq/L	07/26/05	BGS

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES
QA REPORT FORM - METHOD 200.8

QC Sample: 154933-642077 H# 081205 W10

Matrix: WATER

Prep. Date: August 12, 2005

Analysis Date: August 15, 2005

ID#'s in Batch: LR 154933, 155085, 155025, 155019, 155024, 153682

Reporting Units = mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Test	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	% RPD
Al	0.010	0.05	0.066	0.061	112	102	8
Ba	ND	0.05	0.051	0.052	102	104	2
Be	ND	0.05	0.046	0.045	92	90	2
Cr	0.002	0.05	0.058	0.058	112	112	0
Co	ND	0.05	0.054	0.054	108	108	0
Fe	0.046	0.05	0.086	0.086	80	80	0
Mo	0.002	0.05	0.051	0.053	98	102	4
V	ND	0.05	0.048	0.049	96	98	2
Zn	0.004	0.05	0.059	0.060	110	112	2
Sb	ND	0.05	0.052	0.054	104	108	4
As	ND	0.05	0.052	0.052	104	104	0
Cd	ND	0.05	0.052	0.052	104	104	0
Cu	ND	0.05	0.056	0.055	112	110	2
Pb	ND	0.05	0.050	0.049	100	98	2
Ni	ND	0.05	0.055	0.055	110	110	0
Se	ND	0.05	0.056	0.057	112	114	2
Ag	ND	0.05	0.050	0.051	100	102	2
Tl	ND	0.05	0.046	0.045	92	90	2
Mn	0.001	0.05	0.058	0.058	114	114	0

* = Outside QC limits, due to Matrix Interference
If Sample Result > 4 times Spike Added, then "NC"

% REC LIMITS = 70-130
RPD LIMITS = 20

ASSOCIATED LABORATORIES

LCS REPORT FORM - METHOD 200.8

LCS RECOVERY / METHOD BLANK

Test	LCS True Value	LCS Result	LCS %Rec	QC Limit %REC	MB Limit	MB Result
Al	0.05	0.050	100	80-120	0.010	ND
Ba	0.05	0.050	100	80-120	0.005	ND
Be	0.05	0.044	88	80-120	0.001	ND
Cr	0.05	0.051	102	80-120	0.002	ND
Co	0.05	0.056	112	80-120	0.001	ND
Fe	0.05	0.044	88	80-120	0.010	ND
Mo	0.05	0.054	108	80-120	0.005	ND
V	0.05	0.042	84	80-120	0.001	ND
Zn	0.05	0.054	108	80-120	0.010	ND
Sb	0.05	0.054	108	80-120	0.002	ND
As	0.05	0.046	92	80-120	0.002	ND
Cd	0.05	0.052	104	80-120	0.001	ND
Cu	0.05	0.057	114	80-120	0.005	ND
Pb	0.05	0.052	104	80-120	0.005	ND
Ni	0.05	0.055	110	80-120	0.005	ND
Se	0.05	0.053	106	80-120	0.005	ND
Ag	0.03	0.026	104	80-120	0.005	ND
Tl	0.05	0.048	96	80-120	0.001	ND
Mn	0.05	0.057	114	80-120	0.010	ND

ASSOCIATED LABORATORIES

LCS REPORT FORM - METHOD 200.7 / 6010

LCS RECOVERY / METHOD BLANK

Test	LCS True Value	LCS Result	LCS %Rec	QC Limit %REC	MB Limit	MB Result
Ag	1	0.88	88	80-120	0.005	ND
Al	2	2.02	101	80-120	0.030	ND
As	2	1.86	93	80-120	0.005	ND
B	2	2.09	105	80-120	0.050	ND
Ba	2	1.96	98	80-120	0.010	ND
Be	2	2.15	108	80-120	0.005	ND
Cd	2	2.02	101	80-120	0.005	ND
Co	2	2.05	103	80-120	0.005	ND
Cr	2	2.02	101	80-120	0.010	ND
Cu	2	2.02	101	80-120	0.010	ND
Fe	2	2.07	104	80-120	0.020	ND
Mn	2	2.16	108	80-120	0.010	ND
Mo	2	2.10	105	80-120	0.010	ND
Ni	2	2.03	102	80-120	0.015	ND
Pb	2	2.03	102	80-120	0.005	ND
Sb	2	2.06	103	80-120	0.006	ND
Se	2	2.04	102	80-120	0.006	ND
Tl	2	2.02	101	80-120	0.005	ND
V	2	2.00	100	80-120	0.005	ND
Zn	2	1.99	100	80-120	0.010	ND
Ca	2	2.03	102	80-120	0.100	ND
Mg	2	2.09	105	80-120	0.100	ND
K	20	19.30	97	80-120	0.500	ND
Na	2	2.05	103	80-120	0.100	ND

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: LR 153682-636690

latrix: WATER

lethod : 310.1

Prep. Date: 07/18/05

Analysis Date: 07/18/05

D#'s in Batch: LR 153723, 153682

AMPLE RESULT / SAMPLE DUPLICATE

leporting Units = mg/L

Test	Sample Result	Sample Duplicate	RPD
Bicarbonate	131	131	0.0
Carbonate	ND	ND	0.0
Hydroxide	ND	ND	0.0
Total Alkalinity as CaCO3	108	108	0.0

PD = Relative Percent Difference of Sample Result and Sample Duplicate
D = "U" - Not Detected

RPD LIMITS = 20

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample:	LR 154836-641703
Matrix:	WATER
Prep. Date:	Aug 09-05
Analysis Date:	Aug 10-05
ID#'s in Batch:	LR 154836, 154776, 154842, 153682, 154804

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
MERCURY	245.1 / 7470A	ND	0.002	0.0015	0.0015	75	75	0

RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 75 - 125
RPD LIMITS = 20

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	0.0052	0.005	104	80%	120%

Value = Preparation Blank Value; ND = Not-Detected
LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: 153721

Matrix: WATER

Prep. Date: Jul 18-05

Analysis Date: Jul 18-05

ID#'s in Batch: LR 153541, 153542, 153721, 153653, 153682, 153687, 153748

SAMPLE RESULT / SAMPLE DUPLICATE

Reporting Units = mg/L

Test	Method	Sample Result	Sample Duplicate	RPD
TDS	160-1 / 2540C	638	632	1

RPD = Relative Percent Difference of Sample Result and Sample Duplicate

RPD LIMITS = 5 %

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLANK	LCS				
Value	Result	TRUE	% Rec	L. Limit	H. Limit
ND	288	293	98	90%	110%

Value = Preparation Blank Value; ND = Not-Detected
LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample : LR 153682-636390

Matrix: WATER

Prep. Date: 07/15/05

Analysis Date: 07/15/05

Lab ID#'s in Batch: LR 153682, 153723, 153710, 153619, 153624, 153761, 153755, 153759

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

REPORTING UNITS = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
CL	300.0	6	200	202	212	98	103	5
SO4	300.0	78	200	287	287	105	105	0
NO3	300.0	0.7	100	103.0	106	102	105	3
NO2	300.0	ND	100	96	101	96	101	5

RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Dup
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%Rec Limits = 80 - 120
RPD Limits = 20

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

Test	Method	PREP BLK	LCS				
		Value	Result	True	%Rec	L.Limit	H.Limit
CL	300.0	ND	41	40	103	90%	110%
SO4	300.0	ND	42	40	105	90%	110%
NO3	300.0	ND	20.0	20	100	90%	110%
NO2	300.0	ND	5.0	5	100	90%	110%

VALUE = Preparation Blank Value; ND = Not-Detected
LCS = Lab Control Sample Result
TRUE = True Value of LCS
L.LIMIT / H.LIMIT = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

C Sample:	LR 153682
Matrix:	WATER
Prep. Date:	July 18, 2005
nalysis Date:	July 19, 2005
)#'s in Batch:	LR 153682, 153634

ATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

eporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
CN	335.2 CN	ND	0.50	0.5	0.41	100	82	20

D = Not Detected
D = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 80-120	
RPD LIMITS = 20	

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	0.093	0.1	93	90%	110%

alue = Preparation Blank Value
LCS Result = Lab Control Sample Result
ie = True Value of LCS
L.imit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

ʾC Sample:	LR 153682-636390
ᴹatrix:	WATER
Prep. Date:	July 19, 20, 2005
nalysis Date:	July 20, 2005
D#'s in Batch:	LR 153682, 153486, 153689, 153604, 153690, 153691, 153706, 153823

ATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

eporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
CN	335.4 / 4500-CN	ND	0.50	0.530	0.472	106	94	12

ND = Not Detected
PD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS	*= 80-120*
RPD LIMITS	*= 20*

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	0.105	0.1	105	90%	110%

alue = Preparation Blank Value
LCS Result = Lab Control Sample Result
ue = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

C Sample: LR 153682

Matrix: WATER

Prep. Date: 7/15/2005

nalysis Date: 7/15/2005

ID#'s in Batch: LR 153611, 153616, 153617, 153682, 153738, 153758

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
MBAS	425.1	ND	1.00	0.98	0.97	98	97	1

D = "U" - Not Detected
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 75 - 125	
RPD LIMITS = 20	

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	0.94	1.00	94	80%	120%

Value = Preparation Blank Value
CS Result = Lab Control Sample Result
ue = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

C Sample: LR 153682-636390

Matrix: WATER

rep. Date: 07/15/2005

nalysis Date: 07/15/2005

ID#'s in Batch: LR 153680, 153655, 153603, 153682

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
FLUORIDE	340.2 / 4500-F	0.43	0.67	1.17	1.17	110	110	0

ND = Not Detected
D = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS	*= 75 - 125*
RPD LIMITS	*= 20*

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	1.12	1.00	112	80%	120%

lue = Preparation Blank Value
S Result = Lab Control Sample Result
True = True Value of LCS
Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

C Sample: 153682

Matrix: LIQUID

Prep. Date: July 18, 2005

nalysis Date: July 21, 2005

D#'s in Batch: LR 153682

ATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = pCi/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
Gross Alpha	900.0	ND	5.7	5.3	5.5	93	96	4

D = "U" - Not Detected
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 80-120	
RPD LIMITS = 20	

REPARATION BLANK / LAB CONTROL SAMPLE RESULTS

Test	Method	PREP BLK Value	LCS Result	True	%Rec	L.Limit	H.Limit
Gross Alpha	900.0	ND	5.6	5.7	98	80%	120%

Value = Preparation Blank Value; ND = "U" for Not-Detected
CS Result = Lab Control Sample Result
ue = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
806 N. Batavia • Orange, CA 92868
(714) 771-6900 • Fax: (714) 538-1209

CHAIN OF CUSTODY RECORD

Date 7/8/05 Page 1 of 1
153682

CLIENT Golden State Environmental
ADDRESS 15051 Leffingwell Rd #102
Whittier CA 90604
PROJECT NAME White Mtn Estates

PROJECT MANAGER Dale Schneeberger
PHONE NUMBER 562 941-3449
SAMPLERS: (Signature) Dale Schneeberger

Lab Use Only:
Samples Intact Yes ✓ No ___
County Seals Intact Yes ___ No ___
Sample Ambient ___ Cooled ✓ Frozen ___
Same Day ___ 24 Hr. ___
Regular X 48 Hr. ___

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE: WATER	AIR	SOLID	NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
WMW-2	Water Quality Samples	7/7/05	~~[illegible]~~ 1920	X			8	N	Cations, Anions pH, Cond, TDS, MBAS CN, Nitrite, Metals and Metalloids; Radiochemistry (Gross Alpha)

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Dale Schneeberger	M Montie	7/14/05
Relinquished by: (Signature) M Montie 1710 7/14/05	Received by Laboratory for analysis: (Signature) [signature]	Date/Time 7/14/05 1715

Special Instructions:

I hereby authorize the performance of the above indicated work.
Dale Schneeberger

DISTRIBUTION: White with report. Yellow to AL, Pink to Courier

Attachment D

(Comments to Letter Dated July 8, 2005)

Attachment D

Response to review of Preliminary Hydrogeologic Investigation, White Mountain Estates – Phase 2, Chalfant Valley, Mono County by AMEC Earth & Environmental, Inc. (AMEC).

<u>AMEC Comment 3</u> – *On page 4 under heading "Potential Water Quantity and Quality Impacts to Springs" the following statement is made: For lots located at elevations above the springs, impact to the spring system would be less than 2.3 gpm per lot. The report also states that the number of lots above the springs is undefined and development may not proceed in the area. Based on these comments it is AMEC's opinion that if further development in the area east of the springs is planned a much more detailed evaluation of the potential impacts should be addressed.*

<u>GSE Response</u> – *Presently, plans for the WME Phase 2 upper development area call for the division of the parcel into 8 lots (39-46) and three common areas (lots B, C and D). Lot B is the location of the WME Phase 2 well that was completed in September 2004. As noted previously, this well is located below (west) of the springs and is separated by a complex system of faults[q]. Of the eight lots planned for development, only two are currently proposed to have individual wells. The area encompassed by these lots (45 and 46) is large (5.7 acres and 19.5 acres, respectively) and is traversed by the numerous faults. The measured average spring flow is 13.7 gpm with approximately 12 gpm (88%) being captured roughly 100 feet downstream for livestock watering purposes, leaving less than two gpm (1.7 gpm) for natural flow downstream. As a result, no significant riparian environment is supported by the spring. Each well, as required for development planning purposes, will produce 3.0 gpm for a total production of 6.0 gpm. Every effort will be made, within the constraints posed by site conditions, to locate the wells up-gradient or cross-gradient from the spring to avoid influence that may result from their pumping, particularly for Lot 46. Assuming a worse-case scenario of approximately 6.0 gpm loss of flow in the vicinity of the spring in Lot 46, the current un-captured outflow of less than 2 gpm would not be altered, the existing site conditions should not be affected, and significant impact to downstream spring flow is not expected. Moreover, additional flow could be made available by allowing all out-flow from the spring to drain naturally and not be captured below its source as is currently the case. If allowed, this would result in an increase in down stream flow of nearly 350 percent over current conditions, or could also serve as an additional buffer to water use above the spring. Due to the complexity of the hydrogeology in the WME Phase 2 upper development area, further analysis would be required to evaluate, if possible, a minimum distance of well placement relative to the spring to avoid direct impact. However, given that the expected well production of 6.0 gpm is not expected to alter existing site conditions below the spring, the need for such an analysis is considered unwarranted.*

[q] Based on mapping performed by Sierra Geotechnical Services, Inc., Plate 1 – Site Geologic Map and Plate 2 – Geologic Cross Sections A-A' and A'- A''

AMEC Additional Comment – Proposed lots in the intermediate vicinity of the spring are larger than those within Phase 1 of the proposed development. As such they invite the use of significant amount of water for landscaping and other uses than the 3 gpm suggested (albeit on a potentially intermittent basis, growing season). As such the prolific temporary use of water in the immediate area of the spring may significantly reduce the flow of the spring to the point that it ceases to flow on a temporary basis. Therefore, the county may wish to consider the environmental value of this spring and issues associated [with] the potential for reduced flow.

GSE Additional Response – The most recent proposed tract map indicates that approximately one-half of Lot #46 is located above the spring. The remainder of Lot #46 and the other lots (#39 through #45) are located below the spring. A review of the site geologic map[r] prepared for the Phase 2 development indicates that two recommended habitable zones are located in Lot #45, and one potential habitable zone located in Lot #46. The zone in Lot #46 is in a saddle area east of a prominent hill at an elevation of approximately 4537 feet above msl, this to the northwest of the spring. Both the two mapped habitable zones in Lot #45 and the one potential habitable zone in Lot #46 are downgradient (west) of significant fault #4 and the spring to the east. The fault is presumed responsible for causing a "damming effect" to groundwater flow with the "day-lighting" of the flow producing the observed spring above the fault in this area.

The proposed use of water for Lot #45 (and potentially Lot #46) is 3 gpm or 4.9 acre-feet of water per year for each lot. The wells for each lot will be constructed within their respective habitable zone, these zones located downgradient (west) of significant fault #4 and the spring. The potential location for a well in Lot #45 is between approximately 400 feet and 800 feet downgradient from the spring, and for a well in Lot #46 (saddle area) is approximately 200 feet downgradient from the spring. In both cases the spring and the proposed well(s) are separated by significant fault #4. Therefore, the estimated impact to the spring from wells in either lot is expected to be less than significant due to (1) their placement downgradient of the fault and spring, (2) the separation of the spring and proposed well(s) by the fault, and (3) the distance from the closest well in Lot #45 being at least 400 feet and from a well located in the potential habitable zone in Lot #46 of at least 200 feet. Therefore, installation of a well(s) in the area of Lot #45 (and possibly Lot #46) is not expected to reduce the flow of the spring, and consequently, additional investigation regarding the springs is no longer warranted.

AMEC Comment 5 – Given the proximity of the White Mountain escarpment, associated fault zones and potential for significant discharge or recharge boundaries,

[r] Site Geologic Map, White Mountain Estates – Phase 2; prepared by Sierra Geotechnical Services, Inc., Plate 1, dated March 2005.

please provide a rationale for conducting the aquifer-pumping test for 24-hours.

<u>*GSE Response*</u> – *In discussions with Mr. Marvin Moskowitz, Mono County Health Department, Mr. Moskowitz stated that a 24-hr test was adequate to demonstrate production for development purposes, using 75% of the tests discharge value. In this case, 75% of the test's 160 gallons per minute discharge yields at value of 120 gallons per minute.*

<u>*AMEC Additional Comment*</u> – *Utilization of 75% of the pumping rate obtained from a 24-hour pumping test may be valid for determining the anticipated long-term production rate for a domestic well that is sited in an area of relatively simplistic hydrogeologic conditions and where previous experience has demonstrated the practice is reliable. However, the existing well site within Lot B is situated in a geologic environment that has been affected in the geologic past and is likely to be affected in the future by numerous earthquake generated fault displacements. These displacements may have affectively created discreet blocks of geologic terrain bounded by relatively impermeably fault gouge. The resulting subsurface conditions are highly complex and their hydrogeologic properties very difficult to characterize. The use of empirically derived rule-of-thumb test procedures that are in large part based [upon] data obtained from areas where geologic conditions are relatively simple and well understood should not be utilized in an area where the geology is as complex as it is beneath Lot B.*

<u>GSE Additional Response</u> – Concur. Consequently, a second well has been installed to the west of the first well (Phase 2 WME Well #1) to provide increased water supply reliability. The data from the 24-hr aquifer test indicates that, while subsurface conditions are complex, it is apparent after the installation of the second well (Phase 2 WME Well #2), that both the Phase 2 WME Well #1 and Phase 2 MWE Well #2 are screened in the main valley aquifer. Following the installation of Phase 2 Well #1, hydrogeologic separation of the valley aquifer and the aquifer associated with the Phase 2 Well #1 was proposed. Within the context of the understanding of the complex hydrogeologic setting at that time, in conjunction with the geotechnical trenching data that had been recently acquired, it seemed a likely scenario to explain the observations. Such conditions could cause the aquifer to respond to pumping as would be anticipated for a semi-confined (leaky) aquifer. Subsequently, analysis of the aquifer test data for the Phase 2 WME Well #2 indicates that the proposed fault block aquifer scenario is not as well defined and may not be present as originally suggested. The similarity in groundwater elevations for the two Phase 2 wells indicates that these wells are probably screened in the same aquifer. Also, the reported depth to water in the Phase 1 well apparently was measured at the time the well was installed and it is likely different than the current depth to water. Consequently, it is reasonable to conclude that the groundwater elevation in the Phase 1 well is similar to the measured groundwater elevations in the two Phase 2 wells, thereby indicating that the three wells are screened within the main valley aquifer system.

AMEC Comment 9 – *The aquifer test solution used (Nueman Method) is typically employed for aquifers that are considered unconfined. The text of the report includes a storativity value of 0.007. Storativity values in the range of 10^{-3} are typically associated with semi-confined / leaky aquifers. Please discuss the test data and analysis further and provide rationale for utilizing the Nueman solution.*

GSE Response – *As discussed in the report, additional geologic data indicate that well is completed in a fault block aquifer, with a fine sand/silt fault zone and adjacent fault causing the well to respond as a confined aquifer in the initial period of pumping, converting to a water table aquifer after a short period of pumping. Therefore, the test data were re-evaluated using the Theis and Neuman solutions. Test data and analyses are presented in Attachment B.*

AMEC Additional Comment – *In review of the aquifer test data and analysis provided it is apparent that a form of unconfined to semi-confined aquifer condition exists in the immediate vicinity of the well installed and tested on Lot B. In addition, the data plots exhibit almost textbook resemblance to those expected from a test performed on a[n] unconfined aquifer (Neuman, S.P., Theory of flow in unconfined aquifers considering delayed response of the water table, Water Resources Research, V.8, No.4, 9/72). It is recognized that use of the Theis and/or Cooper-Jacob methods for analysis of both "early" and "late" time data are often performed to address the permeability of the aquifer and check the validity of applying the Nueman method to the data. However, the results provided indicate a wide range of values for the aquifer parameters reported in the text. This range in values may be due to the unknown aquifer thickness in the vicinity of the well and the fact that the pumping well was used as the observation well. Given the uncertainty of the analysis provided, the County may desire further assessment of the aquifer parameters should they be used to develop a water resource management system of the proposed development.*

GSE Additional Response – Concur. Consequently, Phase 2 WME Well #2 has been installed west of Phase 2 WME Well #1 to provide increased water supply reliability. The data from the 24-hr aquifer test indicates that while subsurface conditions are complex, it is apparent that the two Phase 2 wells are screened in the main valley aquifer.

The selection of the aquifer model that best represents the conditions expected in the vicinity of the Phase 2 WME Well #2 is based on available geological and hydrogeological documentation and interpretation of aquifer test data. The geology of the valley fill material is reported to contain sands and gravels with intervening silts and clays associated with younger alluvial fan deposits. In the vicinity of the proposed development, the source of the alluvium is from the mountain front escarpment to the east. Numerous faults are mapped in along this escarpment. These faults, along with the interbedded silt and clay deposits, result in vertically and laterally discontinuous stratification within the alluvium, and can act as semi-permeable boundary conditions or barriers to groundwater flow within the aquifer. For example, the influence of faulting on the groundwater movement east of the Phase 2 WME Well #2 is evidenced by the presence of springs along mapped fault zones, indicating a spreading of groundwater flowing from the White Mountains. The faults act as groundwater dams controlling spring discharge in the area, with water spilling over elevation lows, the groundwater flow day-lighting as springs where the lows coincide with ground surface lows (erosional channels). In addition, an undetermined amount of underflow and leakage through the faults would be expected, further contributing to the groundwater system below (west) of the faults. Consequently, the conceptual model that is best supported by the current data is that of a hydrogeologic setting consistent with a leaky aquifer model.

The Hantush (1960) and Moench (1985) – Case 1 solutions for a leaky aquifer model provide two different interpretations of the subsurface conditions. The Hantush (1960) solution is simpler but considers storage in the aquitard(s) contributing water as the aquifer is being pumped. The Moench (Case 1) is more complex considering storage in the aquitard(s) and wellbore skin, and assumes that the aquitard is overlain or underlain by a constant head aquitard boundary. The available hydrogeologic data would indicate that the simpler solution, that of storage from the aquitard(s) represents a more reasonable interpretation of the subsurface conditions as it seems unlikely that extensive constant head boundary conditions are present in the vicinity of the Phase 2 WME Well #2. Therefore, the Hantush (1960) solution is considered the most appropriate. The results of the analysis of the second well (Phase 2 WME #2) appear fairly consistent with the results from the previous evaluation from Phase 2 WME Well #1.

<u>AMEC Comment 10</u> – *The California Department of Health Services requires that a permitted public water source be sustainable for a minimum of ten years. Please provide a specific discussion relating to the resource, this requirement and the potential impacts of discharging 145 acre-feet per year from the site for ten years.*

<u>GSE Response</u> – *As indicated throughout the report, the Phase 2 well is located in a fault block aquifer, in a complex hydrogeologic regime, separated from the valley alluvium by a semi-permeable fault. The revised estimated total water requirement (assuming 3 gpm per lot) for the proposed 38 lot development is 184 acre-feet per year. The estimated potential recharge is 165 acre-feet per year, leaving a possible deficit of 19 acre-feet per year. Therefore as a contingency, a second well will be installed in the southwest corner of Lot 12, approximately 750 feet west (down slope) of the Phase II well (Lot B) and will be screened in the valley aquifer. The existing Phase I development is currently supplied from one well located in the northwest corner of the development. According to the White Mountain Mutual Water Company, this well produces at a rate of 250 gpm (probably capable of 350 gpm) with a drawdown of only 2.4 feet.*[5] *The proposed second well to support the Phase II*

[5] Personal Communication, May 10, 2005, Marilyn Voorhis, President, White Mountain Mutual Water Company; citing data from a well test performed by Southern California Edison, in a report prepared by the Manager of Hydraulic Services, 2002.

development, which will be completed in the same aquifer, is expected to be able to produce a similar quantity of water and well efficiency. It is anticipated that at least 50% of the development's water requirements (or about 92 acre-feet per year) will be met with the second well, although it could provide water for the entire planned WME Phase II development as a backup, if necessary. The second well will be located approximately 1200 feet southeast from the existing Phase I well and produce groundwater at an anticipated rate of 60 gpm, or only about 25% of the Phase I well production. As a result, drawdown is expected to be minimal. A reduction in groundwater production from the existing Phase II well (Lot B) from 120 gpm to 60 gpm, representing only about 38% of the test pumping rate of 160 gpm, will transform a 19 acre-feet shortfall into a surplus of approximate 73 acre-feet. Therefore, it is very unlikely that production from the proposed second Phase II well will pose significant impact to the Phase I well, nor pose a significant impact to the springs to the east.

<u>AMEC Additional Comment</u> – The simplistic characterization of the groundwater conditions in the immediate vicinity of the existing well located within Lot B are insufficient to establish a reliable source of groundwater for a period of ten years. The structural, stratigraphic and hydrogeologic conditions beneath Lot B are highly complex and poorly defined and will be difficult if not impossible to characterize by additional subsurface investigation. As such, it is likely that the only way to demonstrate the long-term viability of the existing well is to operate it under the actual demands resulting from residential development for a significant period of time.

<u>GSE Additional Response</u> – The recognition of the complexity of the structural, stratigraphic and hydrogeologic conditions beneath the site in the vicinity of Lot B has been detailed in previous comments (e.g.: AMEC Comment 3 and GSE Response; AMEC Comment 4 and GSE Response; AMEC Comment 6 and GSE Response; AMEC Comment 13 and GSE Response; see also Site Hydrogeologic Conditions, pages 2 through 4 of the GSE report dated May 10, 2005). In recognition of the complex hydrogeologic nature in the vicinity of Lot B and the concern by the developer for providing an adequate water supply, a second well (Phase 2 WME Well #2) was installed and tested. The data from the 24-hr aquifer test indicates that both the first and second wells are screened in the main valley aquifer system, and that the well installed in Lot B (Phase 2 WME Well #1) is not within a discrete fault-block aquifer as originally suggested.

<u>AMEC Comment 13</u> – The report states that the proposed demand is 145-acre feet per year. Footnotes c & d allude to this amount of water being significantly less than the flow through Chalfant Valley. The recharge assessment presented in the report for the drainages in the White Mountains above the project site indicate that there is only 30 acre feet available. However, there was speculation that this amount may be less than anticipated due to geologic factors. The well for the project was installed in alluvial fan deposits at the base of the White Mountains. Information in the form of geochemical data

and/or physical data and analysis would aid in the assessment of the source of recharge and its potential for the site.

<u>*GSE Response*</u> – *Additional physical data has been collected by Sierra Geotechnical Services, Inc. This dataset was used to enhance the understanding of the hydrogeologic regime and flow system in, and adjacent to, WME. As indicated above, the source of water to the WME Phase 2 well is from upgradient, to the east, of the well and is separated from the valley alluvium by a semi-permeable fault. Water flow to the existing Phase 2 well is anticipated to be greater than 30 acre-feet per year, with the potential of up to 165 acre-feet per year. An additional well will be required to provide the required sustainable water source. This additional well will be located to intercept groundwater within the main valley alluvium as described in Comment 10 response above.*

<u>*AMEC Additional Comment*</u> – *The response to comment 13 appears to be adequate as long as the proposed well within Lot 12 provides the quantity and quality of groundwater anticipated.*

<u>GSE Additional Response</u> – The results of the 24-hr aquifer test are summarized on pages 2 through 6 of this report. Assuming 75% of the aquifer test flow rate of 170 gpm, the Phase 2 WME Well #2 will deliver an estimated flow of 127 gpm. This, combined with an estimated flow of 120 gpm from Phase 2 WME Well #1, assumes a combined estimated flow of 247 gpm, therein surpassing the estimated required flow of 114 gpm to the development.

<u>*New AMEC Comment 1 (dated July 8, 2005)*</u> – *Insufficient recharge into the utilized "fault block aquifers" to support the development over time. This statement is made given that the report infers that there may be sufficient recharge that migrates along the White Mountain western boundary fault zone from distant hydraulic basins to support the proposed development. This inference is not supported by the data provided.*

<u>GSE Response</u> – As discussed in responses to previous comments, the current dataset suggests that groundwater flow in the vicinity of the two Phase 2 wells should not be considered strictly as flow through "fault block aquifers." The results of the analysis of the aquifer test data from Phase 2 WME Well #2 suggests that both Phase 2 wells are screened in the main valley aquifer.

<u>*New AMEC Comment 2 (dated July 8, 2005)*</u> – *The well bore of the existing well within Lot B appears to have intercepted fault traces that are considered active as defined by the State Geologist. The occurrence of fault displacements generated by future earthquake events is likely to damage the well to the point that it is unusable.*

<u>GSE Response</u> – The Phase 2 WME Well #2 was installed as an additional water supply well to provide increased reliability of the water supply to the development.

<u>*New AMEC Comment 3 (dated July 8, 2005)*</u> – *The over ultilization of the resource considering the combined use of water from the existing residential development, Tract 37-15 and phase 1 and 2 of the Tentative Tract 37-46.*

GSE Response – The estimated groundwater recharge from North Coldwater Canyon, having an area of approximately 1200 acres, is calculated to be 30 acre-feet per year. Two adjacent areas, Piute Creek to the north and Coldwater Canyon to the south, likely contribute recharge to the groundwater associated with WME Phase 2 development areas. The drainage basins for both Piute Creek and Coldwater Canyon are significantly larger than the drainage basin for North Coldwater Canyon; the Piute Creek basin is estimated to be three times greater and Coldwater Canyon at least five times greater. Therefore, it is probable that each of these basins, assuming a conservative overall 35 percent contribution, could contribute at least an additional 135 acre-feet per year.

amec

July 8, 2005
Project No. 4417000641

County of Mono
Minaret Mall, Suite P
P.O. Box 347
Mammoth Lakes, California 93546

Attention: **Mr. Gerry Le Francois, Planner**

RE: Review Of "Preliminary Hydrogeologic Investigation White Mountain Estates-Phase 2, Chalfant Valley, Mono County" Prepared By Golden State Environmental For White Mountain Estates LLC Dated May 10, 2005

AMEC Earth & Environmental, Inc. (AMEC) has reviewed the above referenced document on behalf of Mono County. AMEC's review assessed the results of the investigation as presented in the referenced report relative to the Mono County requirements listed as items VIII b & f of Appendix G, Environmental Checklist Form. In reviewing and commenting on the referenced document AMEC also considered the following:

- Observations made during our site visit on June 3, 2004,
- Conversations with representatives from Golden State Environmental and White Mountain Estates LLC
- AMEC previous letter regarding the proposed scope of work for hydrogeologic assessment of the site, dated June 2004,
- AMEC previous letter dated January 26, 2004 providing comments to the initial report prepared by Golden State Environmental.

AMEC's comments regarding the above referenced document are focused on the water resource assessment for the site. Specifically with respect to concerns regarding the proposed operation of community well within Lot B and its potential water quantity and quality impacts to the following:

1. The existing potable water supply well located within the residential development (Tract 37-15) immediately west of the subject site.
2. The local springs (inclusive of septic waste disposal and irrigation subsurface return flow) situated up-slope and within the Phase 2 portion of the proposed development.
3. The community water system located in Lot B from future development of private water supply systems within Phase 2 (Lots 39 through 46) and vise versa.

AMEC Earth & Environmental, Inc.
1290 North Hancock Street, Suite 102
Anaheim, California
USA 92807-1924
Tel (714) 779-2591
Fax (714) 779-8377

The purpose of AMEC's review is to provide the County of Mono with technical assistance regarding potential geologic hazards and water resource issues associated with the proposed development based on documents provided by the County.

Based upon AMEC's review of the responses provided by Golden State Environmental in their report dated May 10, 2005 the comments 1, 2, 4, 6, 7, 8 and 11 initially presented in the AMEC review letter dated January 26, 2004 appear to been addressed satisfactorily. The responses to the remaining comments 3, 5,9,10 and 13 are not adequate. The following comments provide additional discussion regarding the initial comment and the response by the projects water resources consultant, Golden State Environmental.

Initial Comment No.	Discussion
3	Proposed lots in the immediate vicinity of the spring are larger than those within Phase 1 of the proposed development. As such they invite the use of a significant amount of water for landscaping and other uses than the 3gpm suggested (albeit on a potentially intermittent basis, growing season). As such the prolific temporary use of water in the immediate area of the spring may significantly reduce the flow of the spring to the point that it ceases to flow on a temporary basis. Therefore, the county may wish to consider the environmental value of this spring and issues associated the potential for reduced flow.
5	Utilization of 75 % of the pumping rate obtained from a 24-hour pumping test may be valid for determining the anticipated long-term production rate for a domestic well that is sited in an area of relatively simplistic hydrogeologic conditions and where previous experience has demonstrated the practice is reliable. However, the existing well site within Lot B is situated in a geologic environment that has been affected in the geologic past and is likely to be affected in the future by numerous earthquake generated fault displacements. These displacements may have affectively created discreet blocks of geologic terrain bounded by relatively impermeably fault gouge. The resulting subsurface conditions are highly complex and their hydrogeologic properties very difficult to characterize. The use of empirically derived rule-of–thumb test procedures that are in large part based data obtained from areas where geologic conditions are relatively simple and well understood Should not be utilized in an area where the geology is as complex as it is beneath Lot B.
9	In review of the aquifer test data and analysis provided it is apparent that a form of unconfined to semi-confined aquifer condition exists in the immediate vicinity of the well installed and tested on lot B. In addition the data plots exhibit almost textbook resemblance to those expected from a test perform on a unconfined aquifer (Neuman, S.P., Theory of flow in unconfined aquifers considering delayed response of the water table, Water Resources Research, V. 8, No 4, 9/72). It is recognized that use of the Theis and or Cooper Jacob methods for analysis of both "early" and "late" time data are often performed to

Initial Comment No.	Discussion
	address the permeability of the aquifer and check the validity of applying the Nueman method to the data. However, the results provided indicate a wide range of values for the aquifer parameters reported in the text. This range in values may be due to the unknown aquifer thickness in the vicinity of the well and the fact that the pumping well was used as the observation well. Given the uncertainty of the analysis provided the County may desire further assessment of the aquifer parameters should they be used to develop a water resource management system of the proposed development.
10	The simplistic characterization of the groundwater conditions in the immediate vicinity of the existing well located within Lot B are insufficient to establish a reliable source of groundwater for a period of ten years. The structural, stratigraphic and hydrogeologic conditions beneath Lot B are highly complex and poorly defined and will be difficult if not impossible to characterize by additional subsurface investigation. As such, it is likely that the only way to demonstrate the long-term viability of the existing well is to operate it under the actual demands resulting from residential development for a significant period of time.
13	The response to comment 13 appears to be adequate as long as the proposed well within Lot 12 provides the quantity and quality of groundwater anticipated.

In addition to the issues that remain unresolved the following items appear to be critical to approval of the development as planned.

1. Insufficient recharge into the utilized "fault block aquifers" to support the development over time. This statement is made given that the report infers that there may be sufficient recharge that migrates along the White Mountain western boundary fault zone from distant hydraulic basins to support the proposed development. This inference is not supported by the data provided.
2. The well bore of the existing well within Lot B appears to have intercepted fault traces that are considered active as defined by the State Geologist. The occurrence of fault displacements generated by future earthquake events is likely to damage the well to the point that it is unusable.
3. Over utilization of the resource considering the combined use of water from the existing residential development, Tract 37-15 and phase1 and 2 of the Tentative Tract 37-46.

Given the space available for development and the potential for multiple aquifers to be tapped there is potential opportunity to develop a strategy for the development of the water resource. Such a strategy may consider long term loss of production from a given aquifer zone and its replacement by tapping a different aquifer or development of an operational strategy that allows for adequate resting periods for given wells that allow for sufficient recharge to a aquifer zone. Given the limited size of the proposed development and the time of build-out these strategies would need to be developed based on data obtained during the installation and testing of the proposed well and follow-on operational data.

As your adjunct staff we look forward to reviewing the final work product to be prepared by White Mountain Estates LLC and providing input relative to your approval of the project. Should you have any questions regarding this letter please contact Brett Whitford at 775-331-2375.

Respectfully submitted,

Brett Whitford
Environmental Services Manager

Mark W. McLarty CEG 1107
Senior Project Manager

BW/MWM/dc

Encl.: None

c: Mr. Gerry LeFrancois, Addressee (1)